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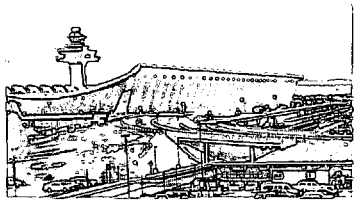
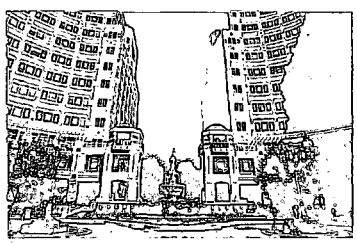
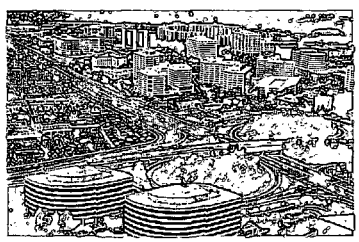
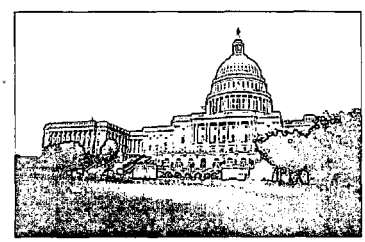
# Dulles Corridor Rapid Transit Project
# Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

Volume I
October 2003

Dulles Corridor
Rapid Transit Project

**DULLES CORRIDOR RAPID TRANSIT PROJECT**

**SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT**

**AND SECTION 4(f) EVALUATION**

Prepared by:
**US Department of Transportation (US DOT)**
**Federal Transit Administration (FTA)**
**Virginia Department of Rail and Public Transportation (DRPT)**
and
**Washington Metropolitan Area Transit Authority (WMATA)**
in cooperation with
**Federal Aviation Administration (FAA)**

Pursuant to:
National Environmental Policy Act of 1969, Section 102(2)(c), 42 U.S.C. 4332 (2)(c);
National Historic Preservation Act of 1966, Section 106, 16 U.S.C. 470f, et seq;
Federal Transit Act, 53 U.S.C. Section 5323(b), Section 5309(e)(2) – (7), 5301(e), and 5324(b)(1) – (3);
Clean Water Act, Section 404, 33 U.S.C. 1344;
Title 49 U.S.C. Section 303, formerly Department of Transportation Act of 1966, Section 4(f);
Executive Order 11988 (Floodplain Management);
Executive Order 11990 (Protection of Wetlands);
Executive Order 12898 (Environmental Justice);
Executive Order 13045 (Protection of Children).

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**U.S. DEPARTMENT OF TRANSPORTATION (US DOT)**
**FEDERAL TRANSIT ADMINISTRATION (FTA)**
**VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION (DRPT)**
**AND**
**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY (WMATA)**

# DULLES CORRIDOR RAPID TRANSIT PROJECT
# SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT

## ABSTRACT

This Supplemental Draft Environmental Impact Statement (Supplemental Draft EIS), describes modifications that have been made to the Dulles Corridor Rapid Transit Project since the publication of the *Dulles Corridor Rapid Transit Project Draft Environmental Impact Statement and Section 4(f) Evaluation* (Draft EIS) in June 2002, and the selection of the Locally Preferred Alternative (LPA) in December 2002. The Supplemental Draft EIS has been prepared to assist decision-makers and the public to understand how refinements to the design of the proposed LPA, the adjustment of project opening years, and the decision to construct the project in two phases, would compare to the Metrorail Alternative evaluated in the Draft EIS. A comparative evaluation of a No Build (Baseline) Alternative and associated costs is also included.

The Dulles Corridor Rapid Transit Project is proposed to improve mobility and transit accessibility in the rapidly developing and congested Dulles Corridor. The limits of the project extend from the vicinity of the West Falls Church Metrorail Station in Fairfax County to the vicinity of Route 772 in Loudoun County. The corridor is bounded by the Routes 193 and 7 on the north and US 50 on the south. The project corridor is approximately 23.1 miles in length. The LPA evaluated in the Draft EIS (June 2002) would operate the entire length of the project corridor, from West Falls Church to Route 772.

Proposed LPA Phase 1, as described in this Supplemental Draft EIS, would have an alignment length of approximately 11.6 miles, and would operate from the Orange Line near the West Falls Church Metrorail Station to Wiehle Avenue. This first phase of the LPA has an opening year of 2009 with the final phase, from Wiehle Avenue to Route 772, opening in 2015.

Public hearings will be held on December 3, 2003 at Langston Hughes Middle School in Reston, Virginia, and on December 11, 2003 at Farmwell Station Middle School in Ashburn, Virginia. Both hearings will begin at 6 p.m. Additional information can be obtained from the project hotline 1-888-566-7245. Comments on this document may be submitted in writing or made orally at the public hearing. Written comments should be sent by December 29, 2003 to Mr. Karl Rohrer, Project Manager, Virginia Department of Rail and Public Transportation, 1550 Wilson Boulevard, Suite 300, Arlington, Virginia, 22209. Comments may also be sent via e-mail to Mr. Karl Rohrer at dullescorridor@aol.com.

Comments must be received by: December 29, 2003.

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## ACRONYMS

| | |
|---|---|
| ACHP | Advisory Council for Historic Preservation |
| APE | Areas of Potential Effect |
| ARS | Adopted Regional System |
| BACT | Best Available Control Technologies |
| Bbl | Barrel of Fuel/Oil |
| BMPs | Best Management Practices |
| BRT | Bus Rapid Transit |
| Btu | British Thermal Unit |
| CBPA | Chesapeake Bay Preservation Areas (Fairfax County) |
| CEQ | Council on Environmental Quality |
| CLRP | Constrained Long-Range Plan |
| CO | Carbon Monoxide |
| CTB | Commonwealth Transportation Board |
| DIAAH | Dulles International Airport Access Highway |
| DAAR | Dulles Airport Access Road |
| dBA | A-Weighted Decibels |
| DRPT | Department of Rail and Public Transportation |
| EDR | Environmental Data Report |
| EIS | Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| EQC | Environmental Quality Corridors |
| FAA | Federal Aviation Administration |
| FBI | Federal Bureau of Investigation |
| FFGA | Full Funding Grant Agreement |
| FHWA | Federal Highway Administration |
| FINDS | Facility Index System/Facility Identification Initiative |
| FRAN | Federal Reimbursement Anticipation Note |
| FSA | Federal Security Administration |
| FTA | Federal Transit Administration |
| FY | Fiscal Year |

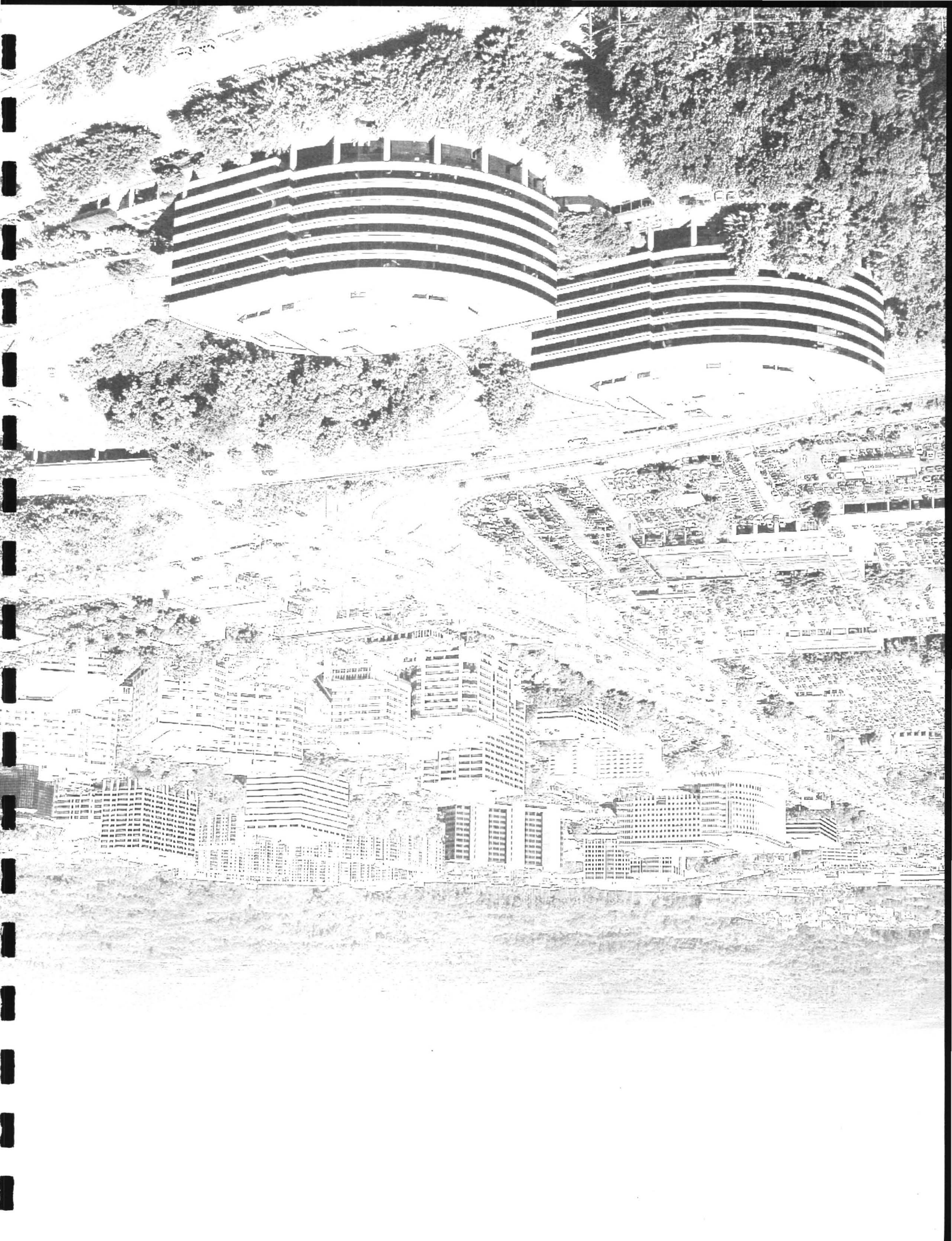
| | |
|---|---|
| IDA | Intensely Developed Areas |
| LEADER | Landowners Economic Alliance for the Dulles Extension of Rail |
| LPA | Locally Preferred Alternative |
| LUST | Leaking Underground Storage Tank |
| MIS | Major Investment Study |
| MTPD | Metropolitan Transit Police Department |
| MWAA | Metropolitan Washington Airports Authority |
| MWCOG | Metropolitan Washington Council of Governments |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act of 1969, as amended |
| NOAA | National Oceanic and Atmospheric Administration (NOAA) |
| NRHP | National Register of Historic Places |
| NVRPA | Northern Virginia Regional Park Authority |
| O/D | Origin/Destination Pair(s) |
| O&M | Operations and Maintenance |
| PA | Programmatic Agreement |
| PDC | Planned Development Commercial |
| PRC | Planned Residential Community |
| RECs | Recognized Environmental Conditions |
| RPA | Resource Protection Area |
| ROD | Record of Decision |
| RSCOD | River and Stream Corridor Overlay Districts (Loudoun County) |
| RTE | Rare, Threatened, and Endangered (species) |
| S&I | Service and Inspection |
| SAP | System Access Program |
| SEP | System Enhancement Program |
| SIP | State Implementation Plan |
| SOV | Single Occupancy Vehicle |
| TDM | Transportation Demand Management |
| TEA-21 | Transportation Equity Act for the 21st Century |
| TIP | Transportation Improvement Program |

| | |
|---|---|
| TSA | Transportation Security Administration |
| USACE | U.S. Army Corps of Engineers |
| US DOT | U.S. Department of Transportation |
| USEPA | U.S. Environmental Protection Agency |
| UST | Underground Storage Tank |
| VdB | Decibels of Vibration Velocity |
| VDCR | Virginia Department of Conservation and Recreation |
| VDEQ | Virginia Department of Environmental Quality |
| VDHR | Virginia Department of Historic Resources |
| VDOT | Virginia Department of Transportation |
| VMT | Vehicle Miles Traveled |
| VPDES | Virginia Pollutant Discharge Elimination System |
| W&OD | Washington and Old Dominion (Trail) |
| WMATA | Washington Metropolitan Area Transit Authority |
| YOE | Year of Expenditure |

Federal Transit Administration

Federal Aviation Administration

# Dulles Corridor Rapid Transit Project



# SHARPENING THE FOCUS

The Dulles corridor, located in Northern Virginia, west of the nation's capital, is home to several of the Washington metropolitan region's most dynamic and rapidly growing activity centers. In June of 2002, a Draft Environmental Impact Statement (Draft EIS) was completed to assess the opportunity to enhance rapid transit service to meet growing needs in the Dulles Corridor. Following public review of the Draft EIS, the decision was made to proceed with the extension of Metrorail transit service in the corridor. The Dulles Corridor Rapid Transit Project would extend from the existing Metrorail Orange Line near the West Falls Church Station in Fairfax County, through Tysons Corner to Dulles Airport, and terminate in eastern Loudoun County.

*High quality, high-capacity Metrorail transit service is the Locally Preferred Alternative.*

As a result of public and agency comments received on the proposed project, a number of refinements have been made to the project design. Alignment and stations have been refined to address public concerns regarding land acquisition and other potential project impacts to improve the fit of the Metrorail facilities into the communities it would serve. In addition, a determination was made to construct the project in two phases to effectively manage funding constraints. The first phase of the project would extend service through Fairfax County to Reston at Wiehle Avenue by 2009; the subsequent phase would extend service to Loudoun County by 2015.

Metrorail - Washington, D.C.

The phasing of construction is necessary to spread the costs of construction over a longer period of time to reduce annual funding needs. FTA is considering only the first phase of construction (i.e., the segment between West Falls Church and Wiehle Avenue) for New Starts funding from the anticipated 6-year reauthorization (FY 2004-2009) of the New Starts program. FTA may consider the subsequent phase for FTA funding in the future, but has made no commitment to do so. Furthermore, FTA has determined that the first phase now being considered for funding has independent transportation utility even if the subsequent phase is never built. (The first phase serves the high employment area of Tysons Corner.) Therefore, FTA will make a decision on the funding of the first phase without regard to possible future phases.

*The Supplemental Draft EIS takes a closer look at the proposed Locally Preferred Alternative, which has been refined in response to past public comments.*

This Supplemental Draft EIS has been prepared by the Federal Transit Administration (FTA), the Virginia Department of Rail and Public Transportation (DRPT) and the Washington Metropolitan Area Transit Authority (WMATA) in cooperation with the Federal Aviation Administration (FAA) to provide the public, local governments, and environmental agencies with information regarding how the changes to the proposed Dulles Corridor Rapid Transit Project might affect the human and natural environment. The Supplemental Draft EIS describes why the project refinements have been proposed, the potential effects on the social, economic and environmental contexts, how the project would be constructed and operated, and the schedule for making the project a reality. The FTA, the Commonwealth of Virginia, Fairfax County, Loudoun County and the Metropolitan Washington Airports Authority (MWAA), would fund the project.

*This Supplemental Draft EIS advances a solution to corridor needs by providing decision-makers, the business community, and area residents the opportunity and information to evaluate the minor changes to the project and its construction phasing.*

This Supplemental Draft EIS is being circulated to assist decision-makers and the public in understanding and shaping Metrorail improvements in the Dulles Corridor. We invite your comments and welcome your observations regarding the proposed improvements at the public hearing in your area, or in writing to Mr. Karl Rohrer, Project Manager, Virginia Department of Rail and Public Transportation, 1550 Wilson Boulevard, Suite 300, Arlington, VA 22209 by the close of the public comment period.

Tysons Corner

Dulles Connector Road

## *OVERVIEW*

This Executive Summary provides an overview of the findings and conclusions of the Supplemental Draft EIS in terms of the following:

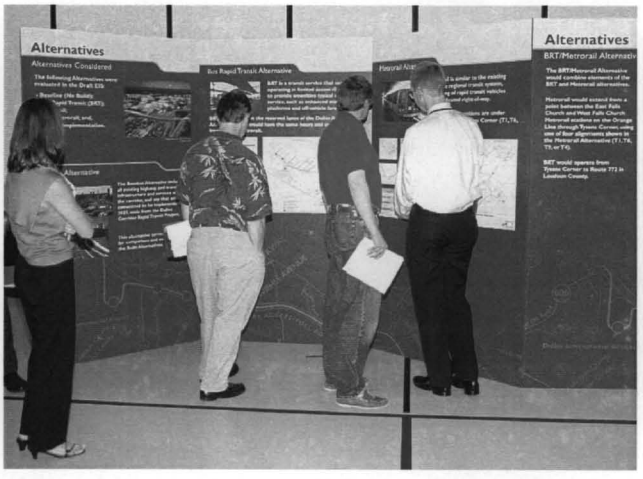
- Shaping the Future
- Project Description
- Environmental Stewardship and Streamlining
- Collaborative Partnerships for Regional Solutions
- Future Actions

## *SHAPING THE FUTURE*

This Supplemental Draft EIS is a tool to assist in deciding among potential refinements to the design and phasing of the proposed Metrorail project in order to advance implementation of the proposed Locally Preferred Alternative (LPA). Since the circulation of the Draft EIS in June 2002, a number of minor refinements have been made to some proposed facilities in response to public comments received on the project. The need for and potential effects of these design refinements are reported in this Supplemental Draft EIS and provides decision-makers, local residents, and the business community the opportunity to evaluate and refine the proposed LPA, and assess how well the proposed LPA can meet Dulles Corridor and regional needs.

The Supplemental Draft EIS has been prepared in accordance with the provisions of the National Environmental Policy Act (NEPA), as amended. Its purpose is to assist decision-makers and the general public in understanding transportation choices and in selecting a transportation investment strategy for the Dulles Corridor that is consistent with federal, state, and local environmental and community initiatives. The Supplemental Draft EIS provides a comparison of the proposed LPA and LPA Phase 1 to the No Build Alternative and to the initial Locally Preferred Alterative [Metrorail Alternative (T6/Y15)] selected by WMATA Board of Directors and the Commonwealth Transportation Board (CTB) in late 2002.

The No Build Alternative includes all existing highway and transit infrastructure and services within the corridor, as well as any investments that are committed to be implemented by 2025, aside from the Dulles Corridor Rapid Transit Project. The No Build Alternative serves as the basis for comparison and evaluation of the proposed LPA Phase 1 that extends Metrorail service to Reston, and the proposed full LPA that extends Metrorail service through the remainder of the Dulles Corridor to Loudoun County.



Public viewing project displays

## *PROJECT DESCRIPTION*

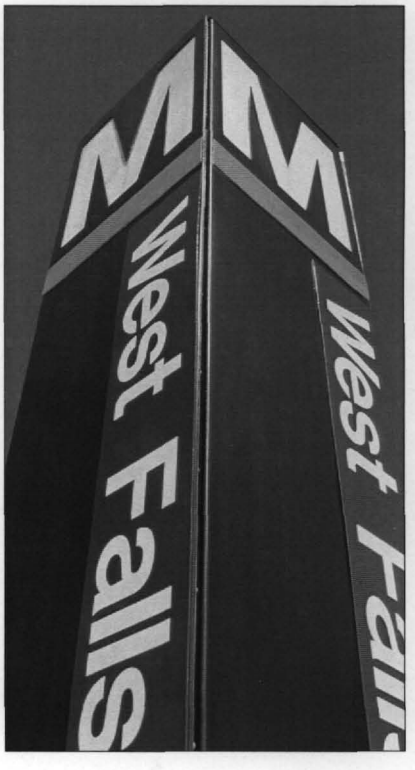
The proposed Locally Preferred Alternative (LPA) of the Dulles Corridor Rapid Transit Project is the Metrorail Alternative (T6/Y15) with a new Service and Inspection (S&I) Yard on Dulles Airport property, improvements to the existing yard at West Falls Church, and 11 new proposed Metrorail stations. In the Draft EIS, this alternative was known as the Metrorail Alternative (T6/Y15). The alignment of the proposed LPA would extend from the existing Metrorail Orange Line from near the West Falls Church Station to Route 772 in Loudoun County, using primarily the medians of the Dulles Connector Road, the Dulles International Airport Access Highway (DIAAH), and the Dulles Greenway.

The proposed LPA and LPA Phase 1 of this Supplemental Draft EIS reflect refinements implemented as a result of comments on the project during circulation of the Draft EIS. The most significant of these changes involves construction of the project in two phases, and the implications for the facilities needed to operate the first 11.6 miles of the project. These include the use of the Wiehle Avenue Station as an interim end-of-line facility in 2009, and the additional improvements at the existing West Falls Church S&I Yard, including noise mitigation measures. Other modifications involve station location and facilities adjustments, localized track alignment shifts, infrastructure location changes based on the effects of the other refinements, and station name changes.

In proposed LPA Phase 1, the existing enhanced express bus service would be modified. Routes now serving the entire Dulles Corridor would be adjusted to increase service levels in the western portion of the corridor. In addition to the 750-space facility at the Dulles North Transit Center, an 830-space parking lot would be constructed at what would be the Route 606 Station under the proposed LPA to accommodate anticipated demand. Other enhancements may include additional access ramps to allow greater use of the DIAAH, additional bus facilities at Wiehle Avenue, and passenger amenities such as real-time information. Longer service hours and more frequent service would be considered as travel demand warrants.

Public Meeting to discuss area needs and solutions

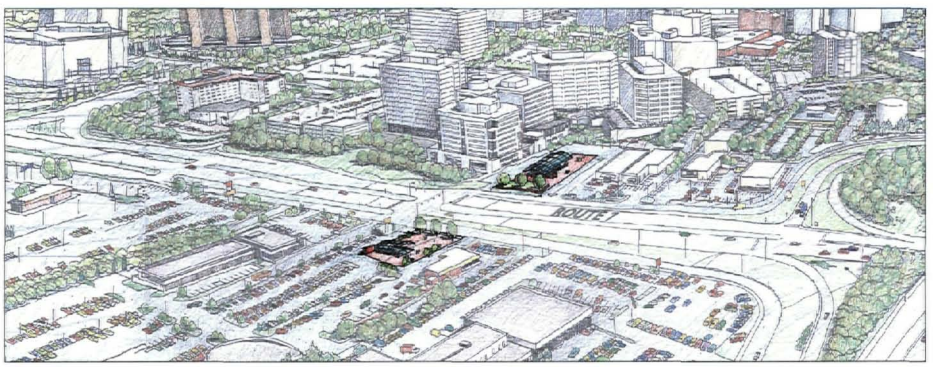
*Minor changes have been made to some proposed facilities in response to public comments on the Draft EIS.*



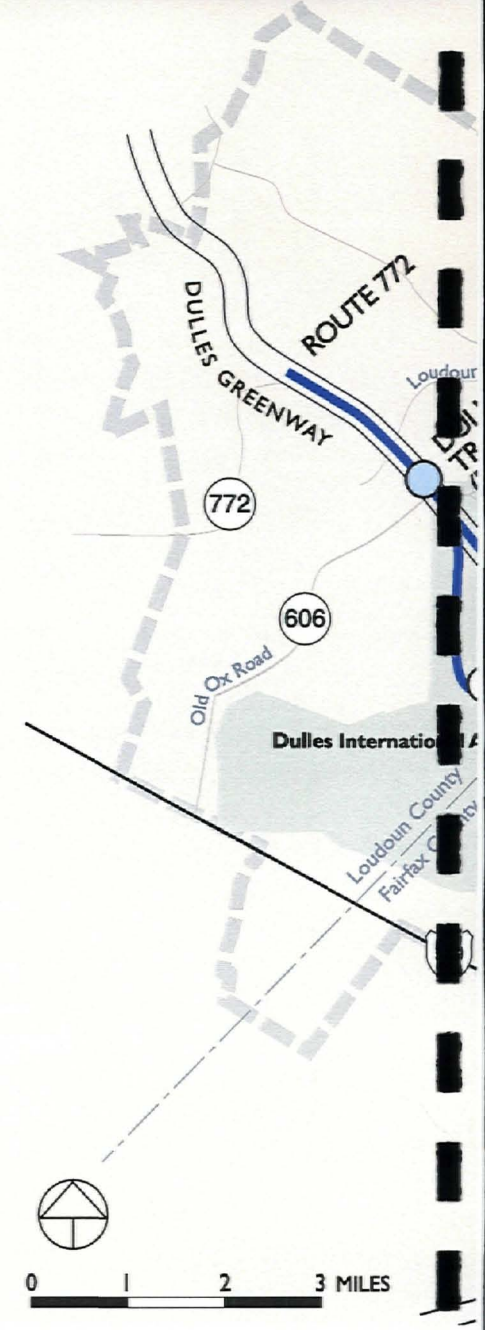
## *PROPOSED LPA PHASE 1*

Proposed LPA Phase 1 would complete the initial 11.6 miles of Metrorail service from the Orange Line to Wiehle Avenue in Reston in 2009. Included in this Phase are five new stations (Tysons East, Tysons Central 123, Tysons Central 7, Tysons West, and Wiehle Avenue), improvements to the existing S&I yard at West Falls Church, and tail tracks at the interim terminus at Wiehle Avenue.

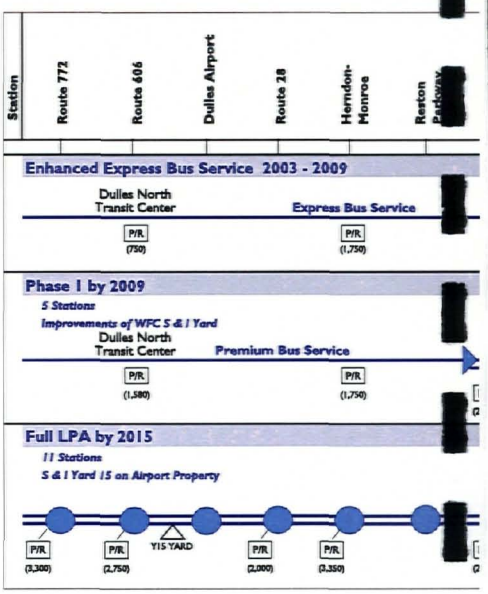
| LPA PHASE 1 STATISTICS<br>5 STATIONS | OPENING YEAR RIDERSHIP | FORECAST YEAR (2025) RIDERSHIP |
|---|---|---|
| AVERAGE WEEKDAY RIDERSHIP | 56,600 | 71,300 |
| TOTAL NEW RIDERS | | 30,000 |
| CAPITAL COSTS | $ 1.5 Billion (Year of Expenditure) | |
| ANNUAL OPERATING INCREMENTAL COSTS | $ 48.7 Million Opening Year (YOE Dollars) | |



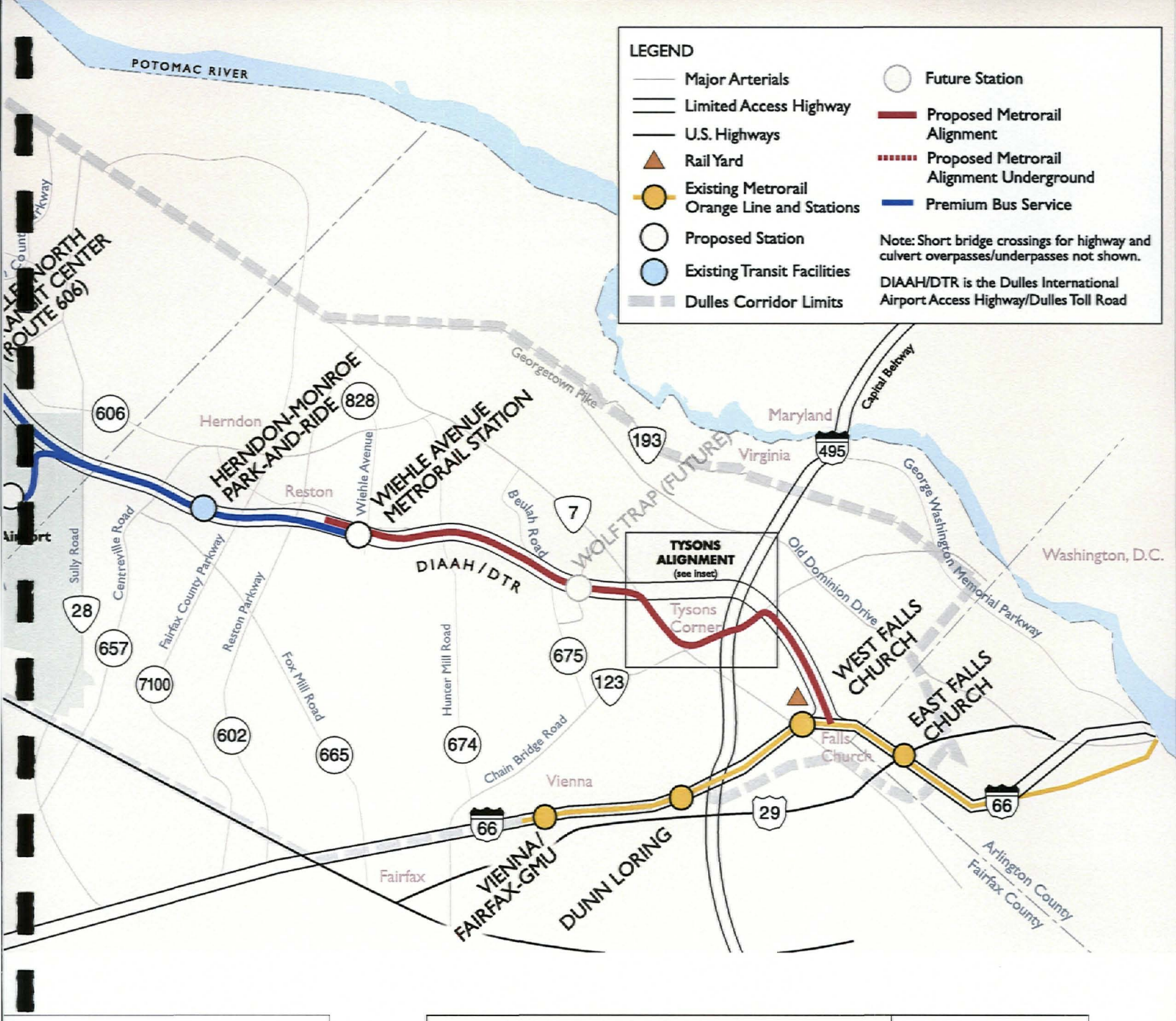

Tysons Central 7 Underground Station

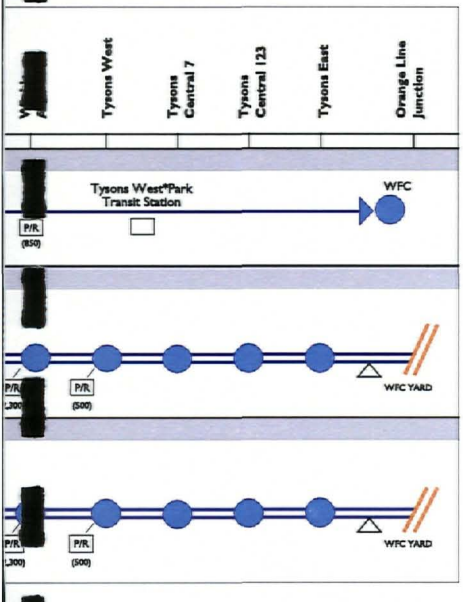


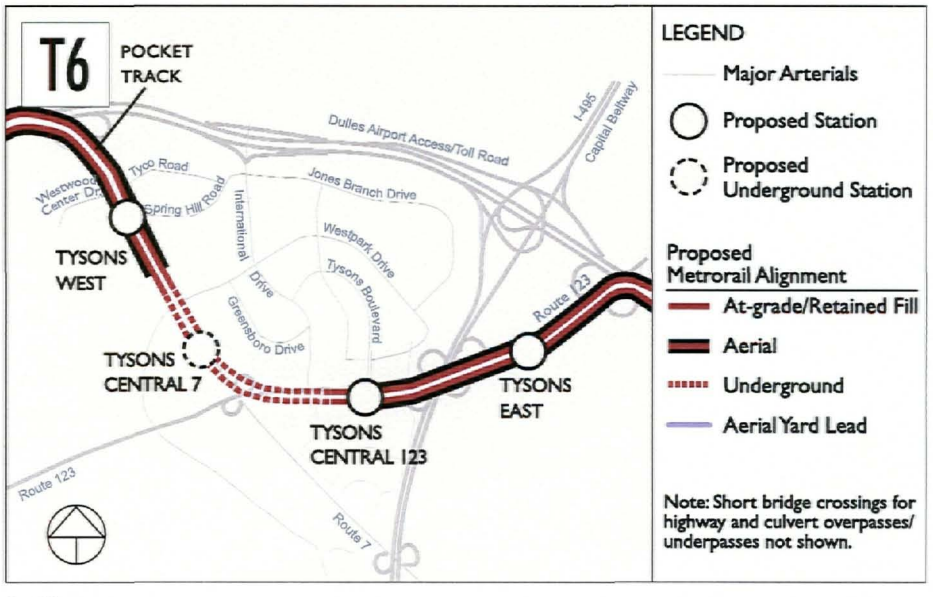

Proposed LPA Phase 1




Construction Phasing Diagram



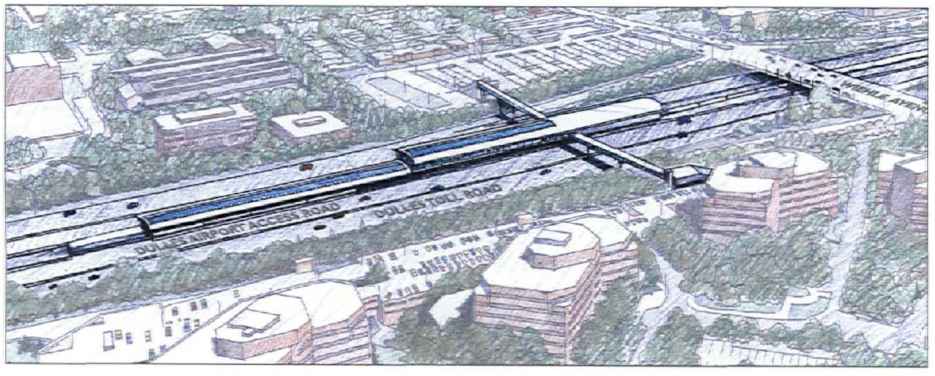




T6 Alignment

## *PROPOSED LOCALLY PREFERRED ALTERNATIVE*

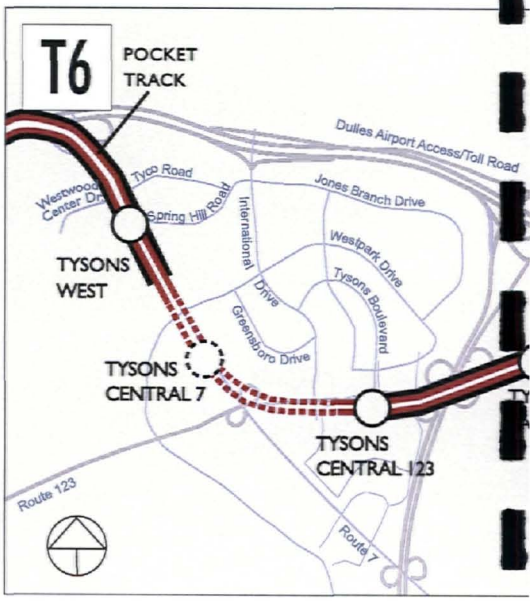
The proposed full LPA would complete the remaining 11.5 miles of Metrorail service from Wiehle Avenue to Route 772 in Loudoun County in 2015. Included are six stations (Reston Parkway, Herndon-Monroe, Route 28, Dulles Airport, Route 606, and Route 772), and a new S&I Yard on Dulles Airport property.

| LPA STATISTICS 11 STATIONS | OPENING YEAR RIDERSHIP | FORECAST YEAR (2025) RIDERSHIP |
|---|---|---|
| AVERAGE WEEKDAY RIDERSHIP | 78,100 | 87,400 |
| TOTAL NEW RIDERS | | 39,300 |
| CAPITAL COSTS | $ 3.4 Billion (Year of Expenditure) | |
| ANNUAL OPERATING INCREMENTAL COSTS | $ 123.6 Million Opening Year (YOE Dollars) | |

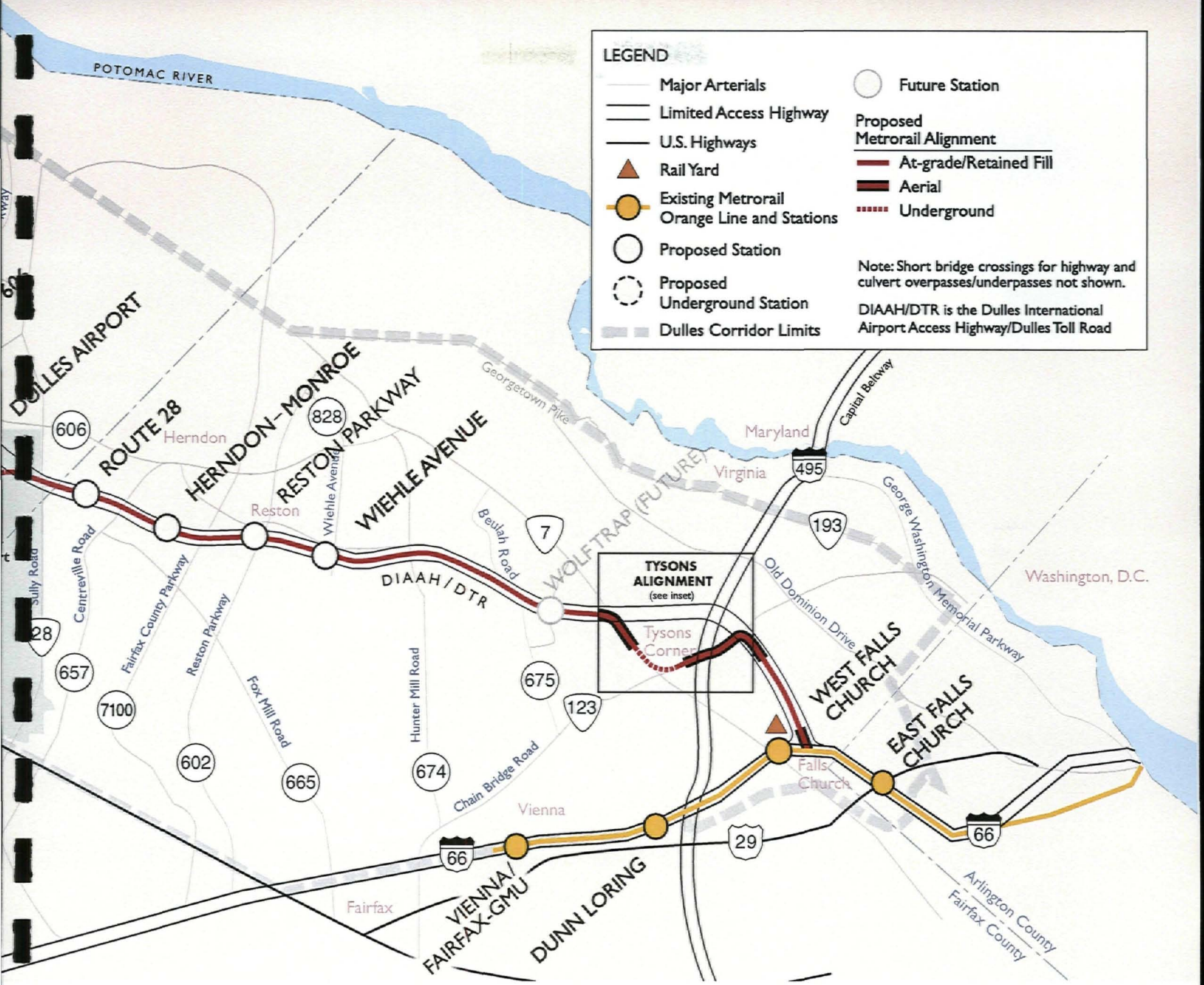


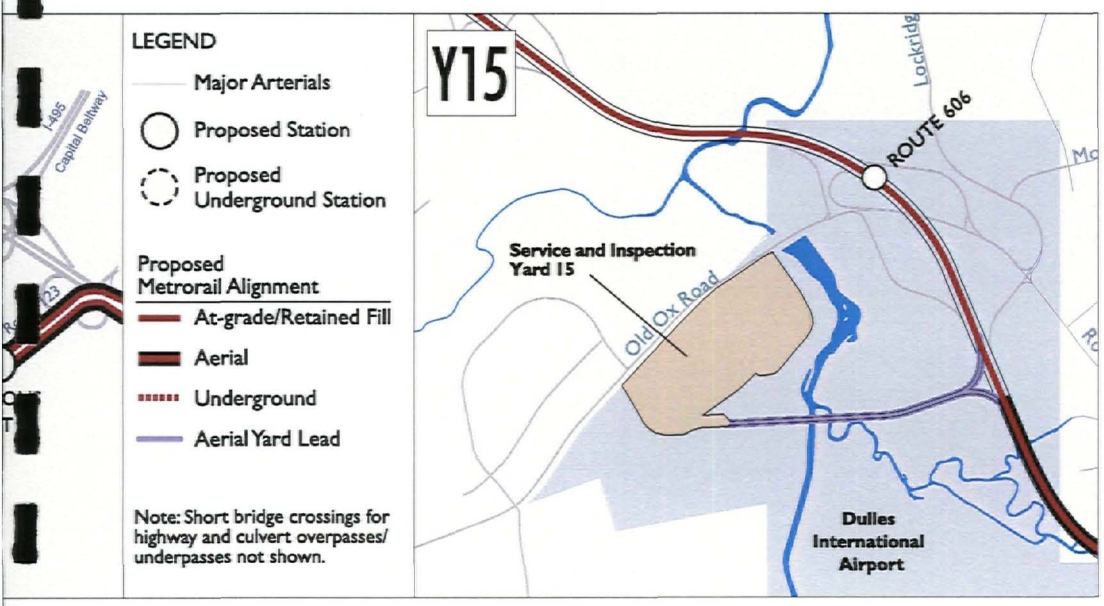

Typical Metrorail Station in Mid-Corridor

Proposed Locally Preferred Alternative

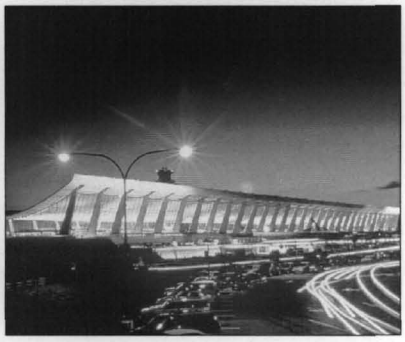



T6 Alignment




Metrorail Service and Inspection Yard 15



Dulles Airport

*The proposed Locally Preferred Alternative will address short-term and long-term corridor needs, enhance regional connectivity, promote environmental quality, and support economic development.*

Loudoun County

*Potential positive effects include:*
** Reinforcement of land use patterns*
** Air quality benefits*
** Reduction in traffic congestion*

## *ENVIRONMENTAL STEWARDSHIP AND STREAMLINING*

The proposed Locally Preferred Alternative evaluated in this Supplemental Draft EIS has been refined to address the transportation needs in the Dulles Corridor while respecting the environmental resources and community context in which the project will be developed. In comparison to the No Build condition, the proposed LPA will:

- Enhance transportation service;
- Increase transit ridership;
- Support future development;
- Support environmental quality;
- Provide a cost-effective, achievable transportation solution; and,
- Serve diverse populations.

With respect to potential impacts on the human and natural environment, evaluation of the proposed LPA and LPA Phase 1 in the Supplemental Draft EIS resulted in findings and conclusions that are very similar to those presented in the Draft EIS:

- Social and environmental impacts are anticipated to be minor because most of the proposed improvements would occur within the medians of the Dulles Connector Road, DIAAH, and Dulles Greenway.
- Positive economic and land use effects are expected, particularly near stations, and the proposed LPA would contribute to more sustainable and transit supportive economic development by focusing on higher-density residential and commercial land use around transit stations.
- The proposed LPA would result in changes to traffic conditions as people change their travel patterns to access the new transit stations, affecting some neighborhoods that surround certain stations. Changes to traffic conditions may affect neighborhoods near stations, but these neighborhoods would directly benefit from the mobility and accessibility that transit improvements would bring.

Overall, the proposed modifications associated with the proposed LPA would not result in environmental consequences that are significantly different from those disclosed in the June 2002 Draft EIS.

DRPT is seeking Federal New Starts funding from the Federal Transit Administration (FTA) for the Dulles Corridor Rapid Transit Project. In order to recommend to Congress which projects should receive New Starts funding, FTA evaluates each project based on its mobility improvements, environmental benefits, operating efficiencies, cost-effectiveness and land use benefits provided by the project. FTA also evaluates the financial plan and funding commitments of each project.

## *COLLABORATIVE PARTNERSHIPS FOR REGIONAL SOLUTIONS*

The proposed Locally Preferred Alternative for the Dulles Corridor Rapid Transit Project has been developed and advanced by a partnership of federal, state, and local entities as the result of an open and collaborative public discussion of the Dulles Corridor, its future needs, and potential solutions to transportation demands. The preparation of the Supplemental Draft EIS was guided by a continuation of the proactive, responsive public outreach and agency coordination program that was initiated and carried through the Draft EIS process.

*A partnership of federal, state, and local entities, working with area businesses and residents, is participating in this Supplemental Draft EIS in order to arrive at a decision for the future of the Dulles Corridor.*

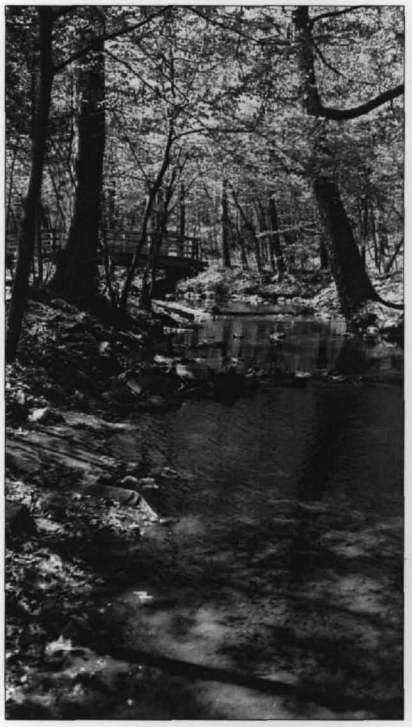
The Supplemental Draft EIS is being circulated for review by elected officials, government agencies, and the public, and is available at libraries, and community centers prior to the public hearings. Comments received on the Supplemental Draft EIS will help shape the future of the project and will be addressed in the Final EIS.

*The public hearings will provide additional opportunities for interested parties to review and comment on proposed improvements.*

## *FUTURE ACTIONS*

To move forward with a solution for the transportation needs of the Dulles Corridor, the following actions must occur:

- Continue refinement of the proposed LPA through coordination with local communities to address outstanding issues related to project design, mitigation, funding, and implementation.
- Finalize coordination with resource and regulatory agencies to conclude impact assessment and mitigation requirements.
- Resolve outstanding issues related to FAA's participation as a cooperating agency and property acquisition.
- Advance project funding through coordination among FTA, DRPT, WMATA, the Metropolitan Washington Airports Authority (MWAA), Fairfax County, and Loudoun County.
- Affirm recommendation of the updated LPA, including project phasing, with Fairfax County, Loudoun County, and MWAA.
- Affirm the proposed LPA, including construction in two phases, by Virginia's commonwealth Transportation Board and the WMATA Board of Directors.
- Complete a Final EIS and obtain a Record of Decision from the FTA identifying the action to be undertaken, environmental findings, and mitigation requirements.
- Start preliminary engineering for the project.
- Advance improvements in regional mobility and accessibility.



Wolf Trap Run at Wolf Trap National Park for the Performing Arts

# SUMMARY OF ALTERNATIVES:

The Supplemental Draft EIS provides detailed analysis of the No Build and Build Alternatives. For easy comparison of the Build Alternatives, the following table highlights the results of various analyses presented in the Supplemental Draft EIS.

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| **Transit Operations** | | | | | | |
| Opening Year Total Ridership[1] | Not Applicable | 71,900 | 6,200 | 78,100 | Not Applicable | 56,600 |
| Opening Year Metrorail Ridership | Not Applicable | 71,900 | 6,200 | 78,100 | Not Applicable | 53,600 |
| Opening Year New Riders[1] | Not Applicable | 32,600 | 4,600 | 37,200 | Not Applicable | 36,700 |
| Forecast Year Total Ridership[1] | Not Applicable | 86,900 | 500 | 87,400 | 71,300[2] | Not Applicable |
| Forecast Year Metrorail Ridership[1] | Not Applicable | 86,900 | 500 | 87,400 | 67,700 | Not Applicable |
| Forecast Year New Riders[1] | Not Applicable | 38,300 | 1,000 | 39,300 | 30,000 | Not Applicable |
| Peak Period Headways | 5 - 30 min. | 6 min. | None | 6 min. | 6 min. | 6 min. |
| Non-Peak Period Headways | 30 - 60 min. | 12 min. | None | 12 min. | 12 min. | 12 min. |
| **Costs[4]** | | | | | | |
| Capital Costs (by Year of Expenditure) | $0 | $3.1B | $0.3B | $3.4B | $1.5B | $1.5B |
| Capital Funding Sources[5] | Not Applicable | 50% Federal 50% Local | None | 50% Federal 50% Local | 50% Federal 50% Local | 50% Federal 50% Local |
| Incremental Annual O&M Costs (YOE Dollars) | Not Applicable | $179.4M | None | $179.4M | $101.6M | $48.7M |
| **Social Effects** | | | | | | |
| *Land Use* | | | | | | |
| Compatible with Existing Land Use | Yes | Yes | None | Yes | Yes | Yes |
| Consistent with Comprehensive Plans | No | Yes | None | Yes | Partial | Partial |
| Compatible with Planned Development | No | Yes | None | Yes | Partial | Partial |
| Consistent with Local Zoning | Yes | Yes | None | Yes | Yes | Yes |
| *Neighborhood Effects* | | | | | | |
| Community Facility Impacts | None | 2 | None | 2 | 1 | 1 |
| Property Value Increase at Stations | Unlikely | Likely | None | Likely | Likely | Likely |
| Residential Displacements | 0 | 0 | None | 0 | 0 | 0 |
| Residential Properties Partially Acquired (No.) | 0 | 12 | +4 | 16 | 15 | 15 |
| Shifts in Population and Employment | Unlikely | Likely | None | Likely | Likely | Likely |
| Community Cohesion | Continue Current Conditions | No Effect | None | No Effect | No Effect | No Effect |
| Noise and Vibration (No. of Neighborhoods Affected) | 0 | 12 | None | 12 | 12 | 12 |
| Commercial Displacements (No.) | 0 | 3 | +1 / -2 | 2 | 2 | 2 |
| Commercial Properties Acquired (No.) | 0 | 64 | +11 | 75 | 45 | 45 |
| *Visual Effects* | | | | | | |
| Tysons Corner | No | Yes | Impact Reduced | Impact Reduced | Impact Reduced | Impact Reduced |
| W&OD Railroad Regional Park | No | Yes | None | Yes | Yes | Yes |
| Dulles Airport Historic District | No | Yes | Impact Reduced | Impact Reduced | No | No |
| *Effects on Archaeological Sites[6]* | | | | | | |
| Potential Adverse Effect (No.) | - | 4 | -1 | 3 | 0 | 0 |
| Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |
| *Effects on Historic Architectural Properties* | | | | | | |
| Potential Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |
| Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |
| *Effects on Public Parklands (Section 4(f) and 6(f) Lands)* | | | | | | |
| Section 4(f) Construstive Use (No./Acres) | 0/0 | 0/0 | None | 0/0 | 0/0 | 0/0 |
| Section 4(f) Direct Use (No./Acres) | 0/0 | 0/0 | None | 0/0 | 0/0 | 0/0 |
| Section 6(f) Conversion of Use | 0 | 1 Potential | None | 1 Potential | 1 Potential | 1 Potential |
| *Disproportionate Impacts to Minority/Low Income Populations* | | | | | | |
| Neighborhoods without Service | 7 | 0 | None | 0 | 1 | 6 |
| Physical Impacts | None | None | None | None | None | None |

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| **Environmental Effects** | | | | | | |
| *Effects on Geologic Resources* | | | | | | |
| Prime and Unique Farmland Soils (Arces) | None | None | None | None | None | None |
| Ground Water | None | Minor | None | None | None | None |
| *Effects on Water Resources* | | | | | | |
| Streams/Water Quality (Linear Feet) | 0 | 96 | +149 | 245 | 0 | 0 |
| Wetlands (Acres) | 0 | 5.0 | -0.1 | 4.9 | 0.1 | 0 |
| Floodplains (No. of 100-year crossings) | 0 | 5 | None | 5 | 3 | 3 |
| *Effects to Habitat and Biota* | | | | | | |
| Stromwater Runoff | Continues Current Conditions | More Impervious | None | More Impervious | Reduced Impervious | Reduced Impervious |
| Effects on Prime Uplands[10] | 0 | 1 | None | 1 | 0 | 0 |
| Stream Effects | 0 | 2 | None | 2 | 0 | 0 |
| Diabase Glade Habitat | 0 | 0 | None | 0 | 0 | 0 |
| Effects on Rare, Threatened, and Endangered Species | 0 | 0 | None | 0 | 0 | 0 |
| *Air Quality* | | | | | | |
| Improved Vehicle Emissions | Yes | Yes | None | Yes | Yes | Yes |
| Contribution to Regional Goals | No | Yes | None | Yes | Partial | Partial |
| Reduction in Regional VMT (Miles) | - | 257.4 M | None | 257.4 M | 192.1 M | 214.5 M |
| NAAQS Violations | No | No | None | No | No | No |
| *Noise and Vibration*[7] | | | | | | |
| Noise Receptors Above FTA Criteria Before Mitigation | - | 119 | None | 119 | 119 | 119 |
| Vibration Receptors Above FTA Criteria Before Mitigation | - | 16 | None | 16 | 16 | 16 |
| Groundborne Noise Receptors Above Criteria | - | 11 | None | 11 | 11 | 11 |
| Hazardous Materials Sites Potentially Effected | - | 16 | +1 | 17 | 7 | 7 |
| Energy Usage (Percent from No Build) | - | +3.7% | None | +3.7% | +1.26% | +0.31% |
| **Economic Effects** | | | | | | |
| Total Transit Employees | 8,990 | +601 | None | +601 | +520 | +520 |
| Corridor Population[8] | 339,497 | +11.0% | None | +11.0% | +4.5% | +2.1% |
| Corridor Employment[8] | 403,857 | +16.0% | None | +16.0% | +6.3% | +3.0% |
| Corridor Development (Million Square Feet)[8] | 301.31 | +15.0% | None | +15.0% | +5.4% | +2.5% |
| **Transportation Effects** | | | | | | |
| Number of Intersections at LOS F-a.m.[9] | 20 | 21 | None | 20 | 6 | Not Available |
| Number of Intersections at LOS F-p.m.[9] | 16 | 17 | None | 17 | 6 | Not Available |
| Number of Intersections Requiring Mitigation as a Result of Project | - | 9 in 2025 | 0 in 2025 | 9 in 2025 | 0 | 5 |
| Consistent with Transportation Plans | Partial | Yes | None | Yes | Partial | Partial |
| **Secondary and Cumulative Effects** | | | | | | |
| *Potential for Effects Related to Secondary Development* | | | | | | |
| Population Increase at Stations | - | 0% - 986% | None | 0% - 986% | 13% - 986% | 13% -329% |
| Employment Increase at Stations | - | 13% -236% | None | 13% -236% | 16% -29% | 7% - 29% |
| Additional Demand for Public Services | - | Yes | None | Yes | Less than Full LPA | Less than Full LPA |
| Change in Visual Character at Stations | - | Yes | None | Yes | East of Wiehle Avenue | East of Wiehle Avenue |
| *Contribution of Project to Cumulative Effects* | | | | | | |
| Change in Development Character | - | Yes | None | Yes | East of Wiehle Avenue | East of Wiehle Avenue |
| Effect on Undeveloped Land in Loudoun County | - | Yes | None | Yes | No | No |
| Linkage Between Transportation and Secondary Development | - | Strong | None | Strong | Weaker than with Full LPA | Weaker than with Full LPA |
| Effect on Transportation Demand Management Strategies | - | Strong | None | Strong | Weaker than with Full LPA | Weaker than with Full LPA |

1 Average weekday riders.
2 Includes 3,900 premium bus riders.
3 Percent increase in a.m. peak n the eastbound direction at Wiehle Avenue.
4 "B" – Billions, "M" – Millions.
5 Local refers to monies that would come from local jurisdictions as well as the Commonwealth of Virginia.
6 Likely that resources destroyed by previous construction. Potential effects if resources remain.
7 Planned mitigation measures will reduce impacts below FTA criteria.
8 Changes in population, employment, and development potential calculated for areas within 1/2-mile radius of proposed stations except in Tysons Corner, where a 1,600-foot radius was used. Changes added to totals for all TAZs in corridor.
9 LOS - Level of Service; Measure of performance of intersections: A being the best and F being the worst.
10 Prime uplands include areas of mature or pristine deciduous or other forest types that support wildlife populations.

## PUBLIC HEARING:

*For more information on the dates, times, and locations of the public hearings, please call the project hotline at 1-888-566-7245, TDD 202-638-3780, or view the project website at www.dullestransit.com.*

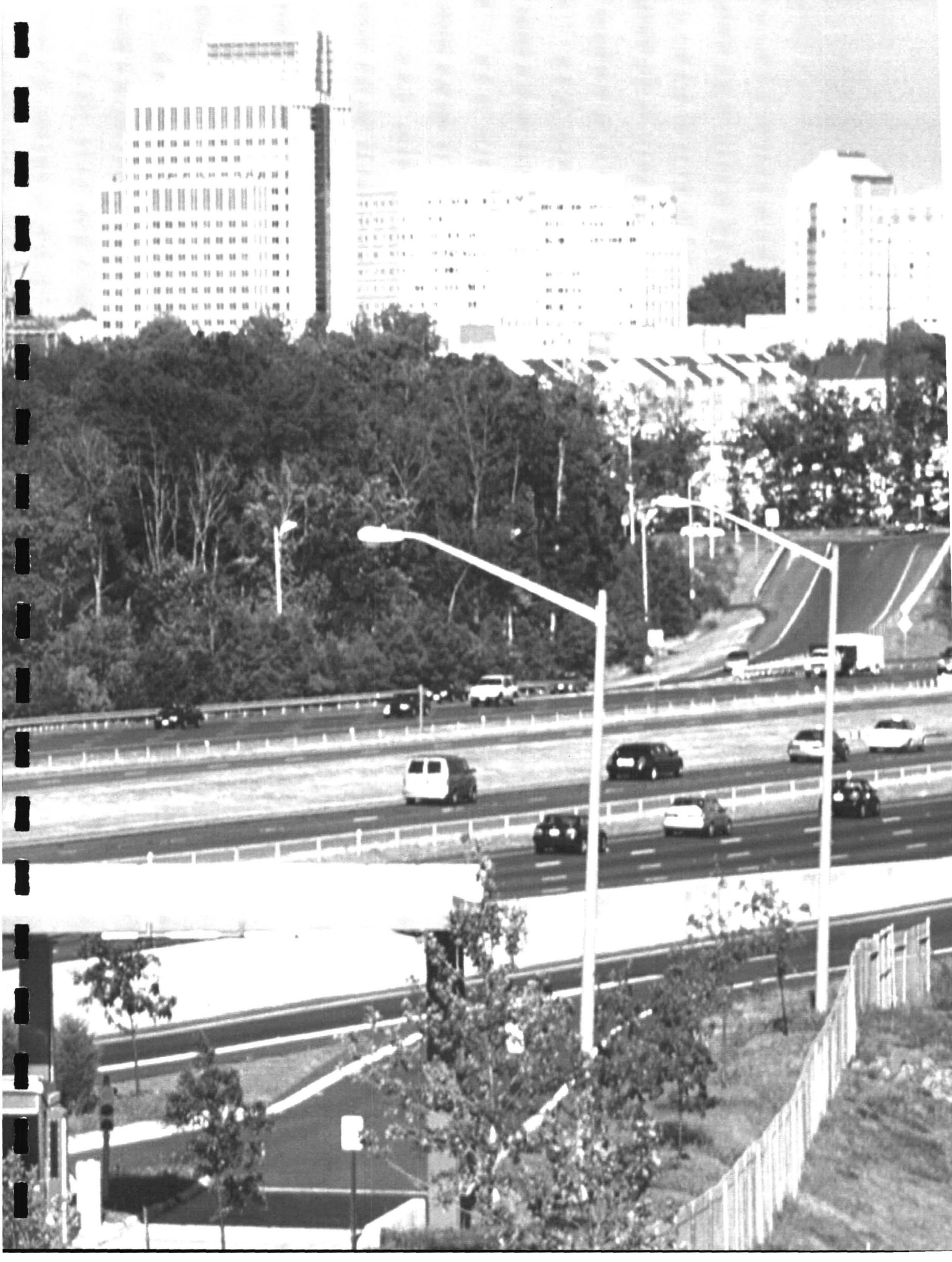
## COMMENTS:

*Written comments should be mailed to Mr. Karl Rohrer, Project Manager, Virginia Department of Rail and Public Transportation, 1550 Wilson Boulevard, Suite 300, Arlington, VA 22209, or sent electronically to dullescorridor@aol.com.*

## FOR MORE INFORMATION:

*The Supplemental Draft EIS will be available at the public hearings and also is available for review at the libraries and community centers noted below. The Executive Summary of the Supplemental Draft EIS may be viewed on the project website at www.dullestransit.com.*

*Arlington Central Library*
*Ashburn Farm Association*
*Broadlands Visitor Center*
*Dolly Madison Community Library*
*Eastern Loudoun Regional Library*
*Fairfax City Regional Library, Virginia Room*
*Falls Church Community Center*
*Falls Church Library*
*Great Falls Community Library*
*Greater Reston Community Library*
*Herndon Community Center*
*Herndon Fortnightly Library*
*Lovettsville Library*
*McLean Community Center*
*Middleburg Library*
*Patrick Henry Community Library*
*Purcellville Library*
*Reston Community Center*
*Reston Regional Library*
*Rust Library*
*Sterling Library*
*Thomas Balch Library for Local History*
*Tysons-Pimmit Regional Library*
*Vienna Community Center*



# 1 PURPOSE AND NEED FOR THE PROPOSED ACTION

This chapter summarizes the purpose and need for the proposed Dulles Corridor Rapid Transit Project based on the information presented in the *Dulles Corridor Rapid Transit Project Draft Environmental Impact Statement and Section 4(f) Evaluation* (June 2002) (Draft EIS). The role of the Supplemental Draft EIS in supporting the overall project decision-making process is also described.

## 1.1 BASIS FOR SUPPLEMENTAL DRAFT EIS

Rapid transit in the Dulles Corridor was initially explored in the 1950s as part of the planning of Dulles Airport. At that time, it was decided to reserve the median of the Dulles Airport Access Road (DAAR), now called the Dulles International Airport Access Highway (DIAAH), for future transit access to the airport. Subsequently, the need for transit in the corridor was evaluated in the late 1960s during the planning of the regional Metrorail system. While the initial Adopted Regional System (ARS) did not include a connection to Dulles Airport, extending rapid transit service to the airport remained a local and regional goal while the system evolved to the currently adopted ARS illustrated in Figure 1.1-1.

Most recently, providing a rapid transit connection to Dulles Airport was evaluated in the *Dulles Corridor Transportation Study* (1997) and the *Supplement to the Dulles Corridor Transportation Study* (1999). The former, a Major Investment Study (MIS), recommended developing a rail line between the Metrorail Orange Line and Route 772 primarily using the median of the DIAAH. The MIS Supplement in 1999 recommended developing this rail line, but also included interim bus transit improvements.

To advance these recommendations and respond to the continued need for transportation improvements in the Dulles Corridor, the Commonwealth of Virginia through the Virginia Department of Rail and Public Transportation (DRPT), in partnership with the Washington Metropolitan Area Transit Authority (WMATA) and the Federal Transit Administration (FTA), prepared the Draft EIS to document the evaluation of alternative transit improvements for the corridor. The Dulles Corridor Rapid Transit Project, as it is now known, is identified in the *Transportation Equity Act for the 21st Century* (TEA-21) as one of the candidate projects to receive federal funding from FTA. Under the *National Environmental Policy Act of 1969* (NEPA), as amended, federal agencies must consider the environmental consequences associated with all alternatives for a project involving federal action. This evaluation of environmental consequences is required to assist decision-makers and the public in evaluating the relative merits of the project (as compared to a No Build Alternative) and in selecting a preferred course of action from the alternatives evaluated. To address environmental, requirements under NEPA, the Draft EIS was prepared to assist the Commonwealth, WMATA, FTA, the Federal Aviation Administration (FAA), local and regional decision-makers, and the public in understanding the potential effects of the alternatives for the Dulles Corridor Rapid Transit Project and in selecting a proposed action. The information presented in the Draft EIS was based on technical studies documenting effects on the human and natural environment, and reflected comments or suggestions received in the course of public review

and agency coordination activities conducted during the evaluation of alternatives. Based on the analysis contained in the Draft EIS, public hearings held July 29, 30, and 31, 2002, and comments received on the Draft EIS, the Metrorail Alternative (T6/Y15) was selected as the preferred action for the project and was adopted by the Commonwealth Transportation Board (CTB) and by the WMATA Board of Directors in late 2002. For details on the Metrorail Alternative (T6/Y15), please see Chapter 2.

Additional agency and public coordination following the publication of the Draft EIS and selection of the Metrorail Alternative (T6/Y15) resulted in revisions to the proposed project. These changes include design modifications that were made to the alignments and facilities, adjustment of opening years, and scheduling construction of the project in two phases.

The phasing of construction is necessary to spread the costs of construction over a longer period of time to reduce annual funding needs. FTA is considering only the first phase of construction (i.e., the segment between West Falls Church and Wiehle Avenue) for New Starts funding from the anticipated six-year reauthorization (FY 2004-2009) of the New Starts program. FTA may consider the proposed subsequent phase for FTA funding in the future, but has made no commitment to do so. Furthermore, FTA has determined that the first phase now being considered for funding has independent utility even if the subsequent phase is never built. (The first phase serves the high employment area of Tysons Corner.) Therefore, FTA will make a decision on the funding of the first phase without regard to possible future phases.

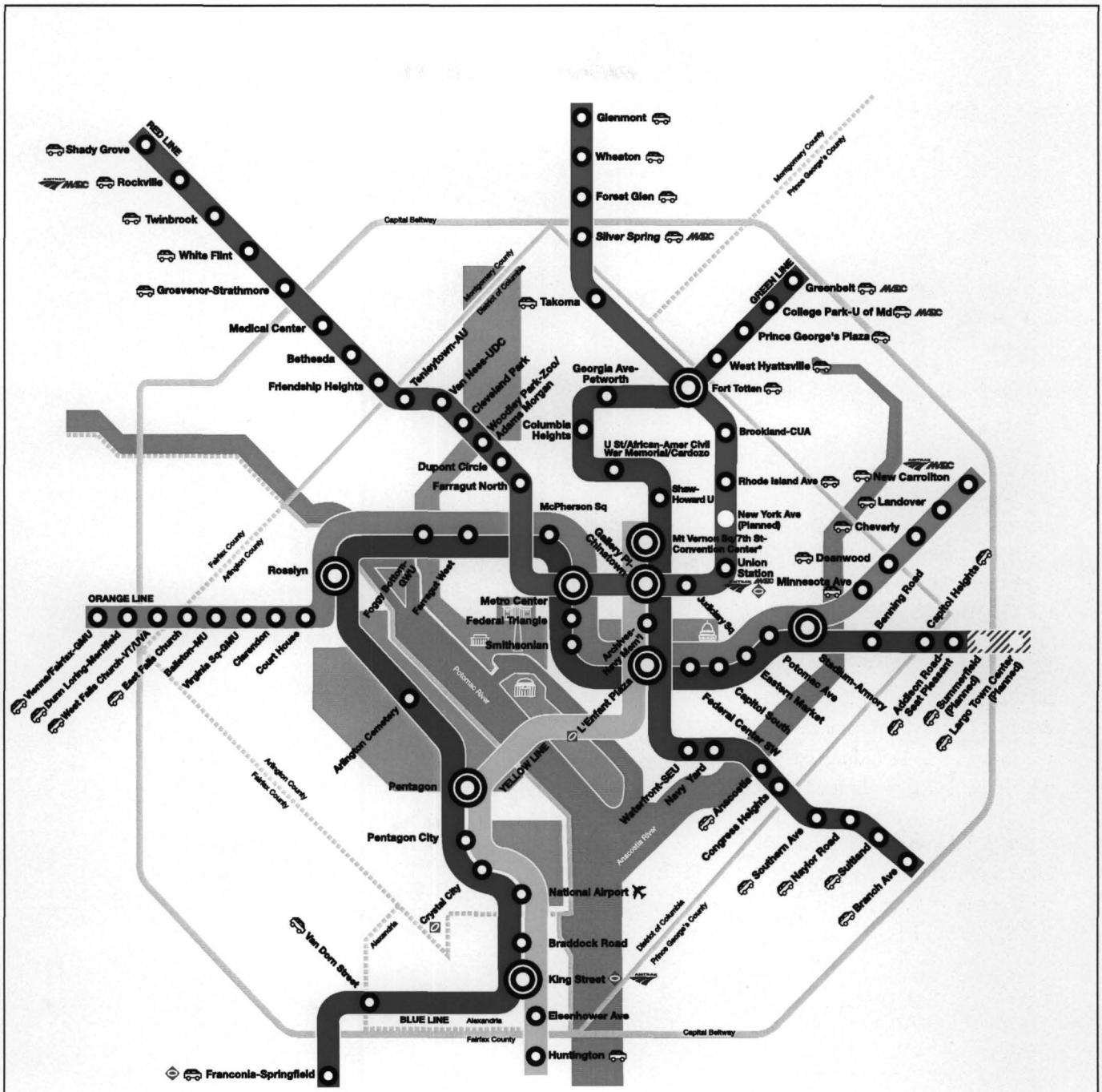
Many of the merits and potential impacts of the proposed Locally Preferred Alternative (LPA) described in the Supplemental Draft EIS remain similar to those presented for the Metrorail Alternative (T6/Y15) despite these design and construction scheduling modifications. This Supplemental Draft EIS summarizes the effects of the proposed LPA, including construction in two phases, as compared to the Metrorail Alternative (T6/Y15), which was evaluated in the Draft EIS and adopted as the LPA in late 2002, and a No Build Alternative.

Once public hearings on the Supplemental Draft EIS are complete, the CTB and the WMATA Board of Directors will consider the refinements included in the proposed LPA. Following the actions of these Boards with respect to the proposed LPA, a Final EIS will be prepared and form the basis for a Record of Decision (ROD) by the FTA.

## 1.2 PURPOSE AND NEED

The purpose of the Dulles Corridor Rapid Transit Project is to provide high-quality, high-capacity transit service in the Dulles Corridor. The introduction of fixed-guideway transit to the corridor is intended to offer travel time savings between the corridor and the region's core, expand the reach of the region's existing rapid transit system, offer a viable alternative to auto travel for commuting and discretionary trips in the corridor, support future development, assist in meeting the region's air quality goals, and serve diverse populations.

The Dulles Corridor, approximately 23 miles long and located in Northern Virginia, west of the nation's capital (Figure 1.2-1), is home to several of the Washington metropolitan region's most dynamic and rapidly growing activity centers. Extending from the vicinity of West Falls Church Metrorail Station in Fairfax County, Virginia to Route 772 in Loudoun County, Virginia includes the high-density office buildings and regional shopping centers of Tysons Corner; the residences, shopping centers, and suburban office complexes of the Reston-Herndon area; the rapidly growing Washington Dulles International Airport (Dulles Airport); and an emerging




LEGEND

- Red Line • Glenmont to Shady Grove
- Orange Line • New Carrollton to Vienna/Fairfax-GMU
- Blue Line • Franconia-Springfield to Largo Town Center
- Green Line • Branch Ave to Greenbelt
- Yellow Line • Huntington to Mt Vernon Sq/7th St-Convention Center

Station in Service
Planned Station
Transfer Station
Virginia Railway Express
MARC
MTA
Commuter Rail
Parking

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WASHINGTON METROPOLITAN
AREA TRANSIT AUTHORITY

Figure 1.1-1

# Regional Metrorail System

Dulles Corridor
Rapid Transit Project

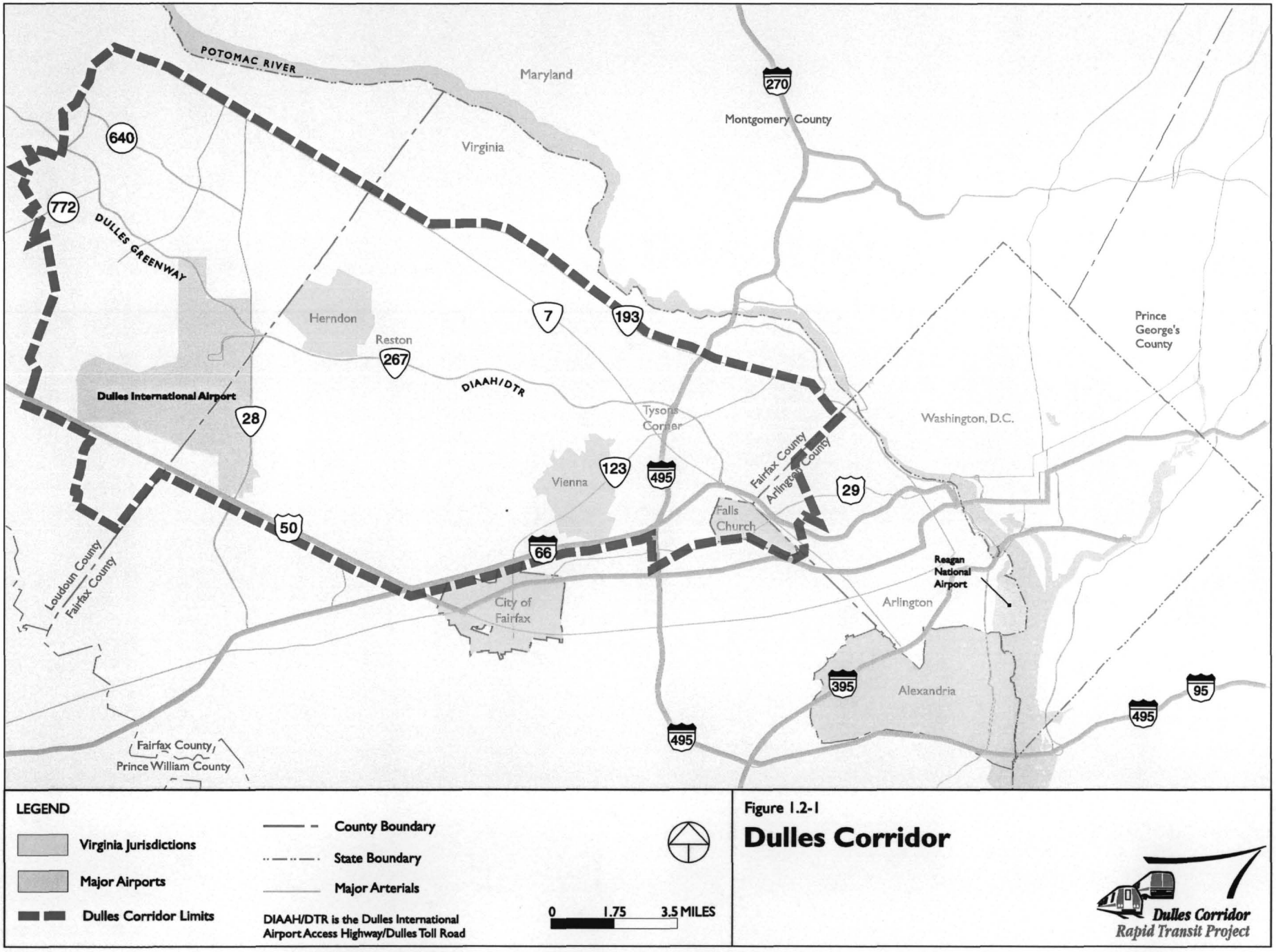



Figure 1.2-1

# Dulles Corridor

Dulles Corridor
Rapid Transit Project

residential and employment center in eastern Loudoun County, which in recent years has become home to several large technology companies. With the Dulles Corridor's increasing attractiveness as a place to live and work, travel in the corridor has been steadily growing over the past 15 years. This increasing travel demand has strained the capacity of the existing transportation network, causing delays and increasing travel times between activity centers within the corridor and the region. The central and eastern portions of the corridor currently experience some of the region's worst traffic congestion.

Over the next 25 years, continued development of the corridor as a regional employment destination, and the maturation of residential communities and commercial areas within the corridor, is expected to outpace the growth of the region as a whole. Parallel increases in travel demand are projected to exceed the capacity of the corridor's already overburdened transportation system, resulting in gridlock traffic conditions on numerous routes, further degradation of air quality, and a threat to the quality of life in the Dulles Corridor.

The ability to expand roadway capacity in the corridor beyond currently planned improvements is constrained by existing development and right-of-way availability. Planned roadway enhancements are not expected to relieve the current state of congestion, which is near or at gridlock conditions in many locations. Moreover, the existing corridor transit system offers limited alternative to auto travel because bus service is also hampered by traffic congestion. Given these factors, combined with a need to reduce auto emissions in the region to meet national air quality standards, alternative transportation improvements in the Dulles Corridor, such as a high-quality, high-capacity rapid transit line have long been the focus of public and private sector studies.

## 1.3 PLANNING CONTEXT

Over the last four decades, the transportation needs of the Dulles Corridor and potential improvements for the corridor have been the subject of several studies conducted by public agencies and private businesses. Most of the studies have identified mass transit alternatives as part of the transportation solution for the corridor. Numerous comprehensive and regional plans have included references to specific transit alternatives, supportive land use measures, and potential funding sources for the Dulles Corridor. Proposed transit solutions for the Dulles Corridor have also been recognized at the federal level, including the identification of the Dulles Corridor Rapid Transit Project as one of the candidate projects to receive federal funding in the *Transportation Equity Act for the 21st Century* (TEA-21), the federal law that authorizes the government to fund transportation projects.

The planned improvements for the Dulles Corridor Rapid Transit Project, or supportive measures for the project, are included in Fairfax County and Loudoun County transportation and comprehensive plans and in several regional plans. In the *Fairfax County Transportation Plan* (1995), the corridor is referenced in the plan's transportation enhancement map, on which the corridor is highlighted. The *Loudoun County Countywide Transportation Plan* (1995) generally recognizes a need to plan for supportive land uses in the vicinity of future transit centers in specific corridors, including centers at the western end of the Dulles Corridor. The *Fairfax County Comprehensive Plan* (2000, amended 2001) and the *Loudoun County Revised General Plan* (2001) include specific measures in support of transit improvements in the Dulles Corridor. The Fairfax County plan calls for dense development in the corridor, ranging from 8 to 45 dwelling units per acre. Higher-density, mixed-use development will be allowed in Tysons Corner in conjunction with proposed rail stations. The Loudoun County plan allows for up to 50 dwelling units per acre to support transit stations along the Dulles Greenway. The *Loudoun County Revised General Plans* also includes public support for transit services that

would use the corridor, such as carpools, vanpools, bus and rail services, and other alternative modes, with specific funding support for bus services.

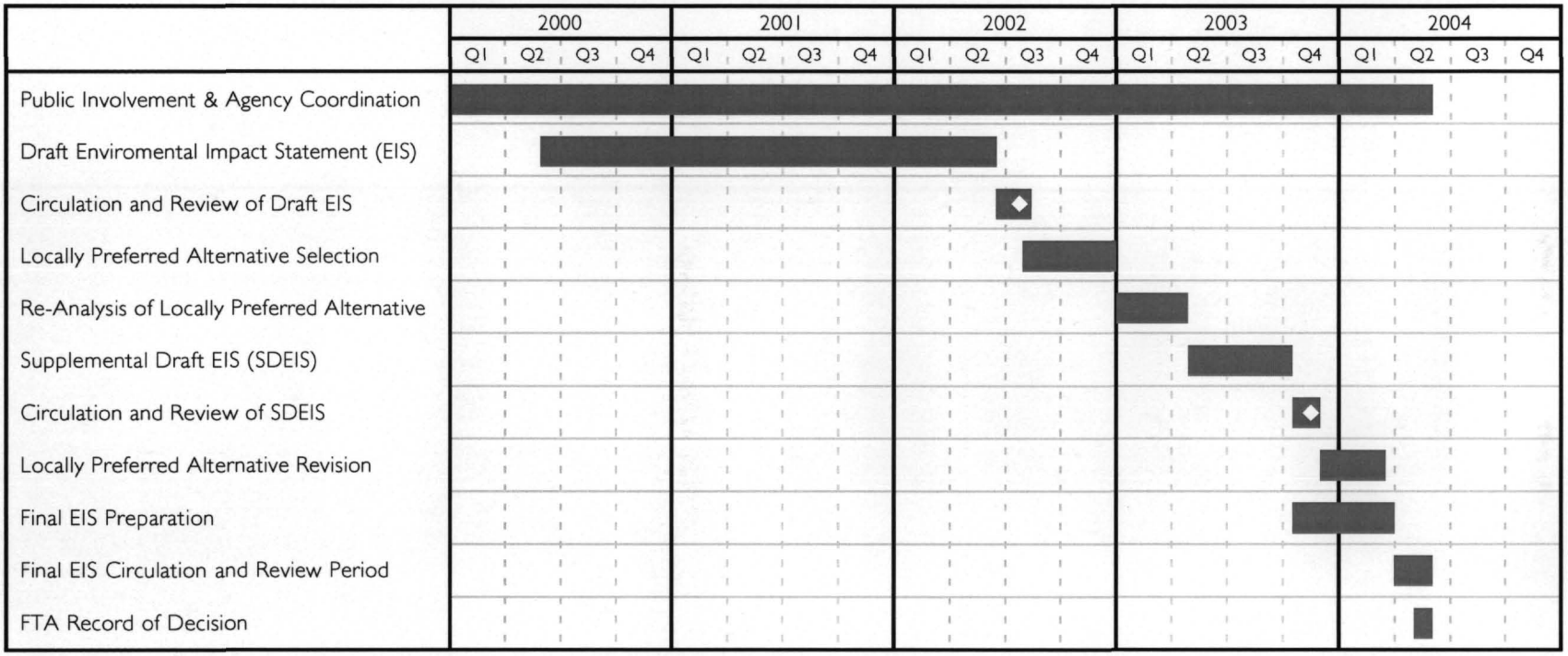
The Dulles Corridor Rapid Transit Project is also included in the region's constrained long-range plan (CLRP) and transportation improvement program (TIP). The *Update to the Financially Constrained Long-Range Transportation Plan for the National Capital Region* (2000, amended 2002) and the *Transportation Improvement Program for the Washington Metropolitan Region FY2003-2008* (2002) identify the project as the phased implementation of rail service in the corridor between East Falls Church Metrorail Station and Route 772 in Loudoun County. As recommended in the MIS Supplement, the project initially includes express bus service, and then transitions to fixed-guideway bus service and ultimately rail service. The early phases of the project (express bus and fixed-guideway transit) are included in the TIP. All phases are included in the CLRP. In January 2003, the 2002 CLRP was amended with a resolution to reflect the selection of the LPA for the Dulles Corridor Rapid Transit Project and the capital cost information for the LPA.

The study area is within the area covered by the Metropolitan Washington Council of Governments (MWCOG), which has responsibilities related to transportation and air quality planning in the Washington Metropolitan Region including the multi-jurisdictional Washington, D.C.-MD-VA nonattainment area. MWCOG develops the region's transportation and air quality strategies as well as specific plans and programs to reduce emissions. The CLRP and TIP have been found to be in conformity with the State Implementation Plan (SIP) for the Washington, D.C.-MD-VA Nonattainment Area.

DRPT is seeking Federal New Starts funding from the Federal Transit Administration (FTA) for the Dulles Corridor Rapid Transit Project. In order to recommend to Congress which projects should receive New Starts funding, FTA evaluates each project based on its mobility improvements, environmental benefits, operating efficiencies, cost-effectiveness and land use benefits provided by the project. FTA also evaluates the financial plan and funding commitments of a project.

### 1.3.1 ENVIRONMENTAL REVIEW AND PROJECT DEVELOPMENT PROCESS

Throughout the preparation of the Draft EIS, DRPT and WMATA worked with local communities and federal, state, and local agencies to define project area needs and challenges, develop possible alternatives to meeting those needs, and assess environmental consequences and potential mitigation relative to each of the alternatives. The Draft EIS was prepared to advance the recommendations of the MIS and document the potential social, environmental, economic, and transportation effects of constructing and operating rapid transit improvements in the Dulles Corridor. Several alternatives were considered, including a No Build (or Baseline) Alternative, a Bus Rapid Transit (BRT) Alternative, a Metrorail Alternative, an alternative that combines these modes (BRT/Metrorail Alternative), and a Phased Implementation Alternative, in which the alternatives are implemented through a staged program of rapid transit improvements. Several alignment variations were examined for each build alternative. All of the proposed build alternatives follow an alignment that generally runs along the Dulles Connector Road, the DIAAH, and the Dulles Greenway. Public Hearings for the Dulles Corridor Rapid Transit Project were held on July 29, 30, and 31, 2002 to provide opportunity for the public to comment on the Draft EIS and the proposed General Plans for the project.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Public Involvement & Agency Coordination
Draft Enviromental Impact Statement (EIS)
Circulation and Review of Draft EIS
Locally Preferred Alternative Selection
Re-Analysis of Locally Preferred Alternative
Supplemental Draft EIS (SDEIS)
Circulation and Review of SDEIS
Locally Preferred Alternative Revision
Final EIS Preparation
Final EIS Circulation and Review Period
FTA Record of Decision

LEGEND

◆ Public Hearings

Figure 1.3-1

# Proposed DRPT/WMATA Environmental Review Process and Schedule

Dulles Corridor Rapid Transit Project

The overall environmental review process and schedule are shown in Figure 1.3-1. As a result of modifications to the project resulting from public and agency coordination in 2003, this Supplemental Draft EIS has been prepared to provide the basis of further public discussion of the potential effects of the project on the humanand natural environment associated with the proposed LPA. Design modification to the alignment and facilities and construction phasing associated with the proposed LPA are documented in this Supplemental Draft EIS. Based on the results of public review of this Supplemental Draft EIS, a Final EIS will be prepared. Based upon the Final EIS, the FTA will issue a Record of Decision (ROD). The ROD will describe the proposed project, summarize the environmental findings, and identify the mitigation requirements associated with project implementation.

### 1.3.2 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A comprehensive public involvement program has been implemented throughout planning and project development and the environmental review process to support decision-making. Public hearings will be held on the Supplemental Draft EIS to provide the public and agencies additional opportunities to comment on the proposed LPA, including design modifications, and construction in two phases. A summary of public involvement, agency coordination to-date and a description of the public involvement process related to this Supplemental Draft EIS is included in Chapter 11.

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# 2 ALTERNATIVES CONSIDERED

This chapter provides background information on the alternatives considered in the Draft EIS for the Dulles Corridor Rapid Transit Project and a definition of the alternatives evaluated in this Supplemental Draft EIS.

## 2.1 DRAFT EIS ALTERNATIVES AND RECOMMENDATIONS

The Draft EIS evaluated the potential effects of several alternative transit improvements for the Dulles Corridor. In addition to a No Build Alternative, four Build Alternatives that generally ran along the Dulles Connector Road, the Dulles International Airport Access Highway (DIAAH), and the Dulles Greenway were evaluated. The alternatives included:

- **No Build Alternative.** The No Build Alternative was consistent with the "no-action alternative" required by the Council of Environmental Quality's (CEQ's) regulations for implementing the *National Environmental Policy Act of 1969* (NEPA) and provided a baseline for comparison against which the other alternatives were evaluated. Improvements to the transportation system associated with the No Build Alternative were limited to additional investment beyond the existing highway and transit service infrastructure and services within the corridor, and any investments that are committed to be implemented by 2025 aside from the Dulles Corridor Rapid Transit Project.
- **Bus Rapid Transit (BRT).** BRT is a bus-based transit system that operates like a rail system. Passengers on BRT are provided rail-like amenities such as off-board fare collection, level boarding, enhanced stations, and platforms. Because it often takes advantage of roadway facilities, BRT is generally a lower-cost transit technology than rail. Three alignment options were considered for the BRT Alternative in the Draft EIS.
- **Metrorail.** Metrorail is the Washington metropolitan region's rapid rail transit system. It is powered by an electrified third rail and operates in exclusive rights-of-way. By using multiple-car trains, Metrorail is capable of moving high volumes of passengers. Key features of the Metrorail system are fixed stations, dedicated right-of-way, advanced fare collection, relatively simple transfers between different lines, and multiple-door boarding from level platforms. For the Metrorail Alternative, several alignment options were considered in Tysons Corner, and three sites were considered for a Metrorail Service & Inspection (S&I) Yard in Loudoun County.
- **BRT/Metrorail.** This alternative combined the first two alternatives. Metrorail would be constructed in the eastern part of the Dulles Corridor as far as Tysons Corner, and BRT would be constructed in the remainder of the corridor west to Route 772 in Loudoun County.
- **Phased Implementation.** This alternative combined the other three Build Alternatives into a program of rapid transit improvements that would be implemented in stages (BRT, then BRT/Metrorail, then Metrorail). This approach would allow decision-makers to begin to address the travel needs in the corridor with rapid transit in the near term, while allowing for future development of rail.

Each of the Build Alternatives included several stations located in the median of the DIAAH, which were similar to stations on the existing Metrorail system. The BRT stations were designed to allow future conversion to rail stations. The alternatives also included the development of station and ancillary facilities such as parking and bus transfer facilities, a bus maintenance and storage facility, a rail S&I Yard, rail traction power substations and tie-breaker stations, and stormwater management facilities.

Evaluation of alternatives in the Draft EIS showed that the No Build Alternative would not provide the same level of transit benefits to address needs in the Dulles Corridor as would the Build Alternatives. Depending on the mode selected, the Build Alternatives would provide a range of transit services with different "trade-offs" relating to quality of service, benefits, and impacts. The advantages of BRT relative to Metrorail included improvements in corridor transit service at an earlier date, fewer impacts on the natural environment, fewer noise and visual impacts to communities, lower traffic impacts in the vicinity of stations (though still higher than the No Build), lower costs, and higher cost effectiveness. Metrorail had several benefits relative to BRT, including greater improvements in transportation service and capacity, greater increases in overall transit ridership, more focused support for future development, and enhanced service to diverse populations. While the Metrorail Alternative was predicted to attract more riders than the BRT Alternative overall, the BRT Alternative was found to be less costly to build than the Metrorail Alternative, and therefore the BRT Alternative had a higher cost-effectiveness. BRT/Metrorail would have some of the advantages and disadvantages of both BRT and Metrorail, and Phased Implementation would have all of the benefits and impacts of BRT and Metrorail combined, at a higher cost due to incremental implementation.

The Metrorail Alternative was the most preferred by those citizens that submitted comments for the public record. While the BRT and BRT/Metrorail Alternatives would perform better in terms of cost effectiveness and implementation time, BRT would not provide direct service connections to Tysons Corner, and BRT/Metrorail would require a mode transfer in Tysons Corner for service to the western portion of the corridor. The Phased Implementation Alternative could be implemented sooner than Metrorail, but would have higher capital costs and no additional ridership or economic development benefits than the Metrorail Alternative (T6/Y15).

As a result of the Draft EIS technical analysis, public comment, and agency coordination, the Metrorail Alternative on alignment T6 and with S&I Yard Y15 was selected as the Locally Preferred Alternative in late 2002. The Washington Metropolitan Area Transit Authority (WMATA) Board of Directors recommended modification of the Adopted Regional System (ARS) to include the Metrorail Alternative (T6/Y15) on November 21, 2002. On December 19, 2002, the Commonwealth Transportation Board (CTB) concurred with the WMATA Board and formally selected and approved the Metrorail Alternative (T6/Y15) as the Locally Preferred Alternative for the project. The Metropolitan Washington Airports Authority (MWAA) endorsed the Metrorail Alternative in late 2002, and the Boards of Supervisors for Fairfax and Loudoun counties and the Town of Herndon also endorsed the selection of the Metrorail Alternative.

Based on subsequent public and agency coordination after the completion of the Draft EIS, the Virginia Department of Rail and Public Transportation (DRPT) and WMATA have identified a series of modifications to the project to resolve outstanding design issues, reduce environmental and community impacts, and allow for construction of the project in two phases. Consequently, in this Supplemental Draft EIS, the adopted Metrorail Alternative (T6/Y15) is no longer referred to as the Locally Preferred Alternative, but is instead identified as the Metrorail Alternative (T6/Y15). The term "Locally Preferred Alternative" or "LPA" is reserved for the revised

alignment and facilities both for the full build-out to Dulles Airport and Loudoun County in 2015 as well as for the partial implementation to Wiehle Avenue in 2009, which is designated by the term LPA Phase 1.

The refined configuration of the project referred to in this Supplemental Draft EIS as the proposed Locally Preferred Alternative (LPA) would:

- Provide for higher ridership and new riders, as well as higher transit mode share for most of the corridor;
- Provide better access to corridor activity centers and increase overall mobility in the corridor;
- Offer shorter travel times for trips within the corridor;
- Support the comprehensive plans of Fairfax and Loudoun counties in a manner consistent with existing transportation infrastructure and planned improvements;
- Allow opportunities for more transit-oriented development;
- Reduce the potential for neighborhood effects through Tysons Corner;
- Support the region's air quality plans by contributing to the reduction in emissions thereby improving the region's air quality; and
- Provide more operational flexibility in Tysons Corner.

## 2.2 ALTERNATIVES EVALUATED IN THE SUPPLEMENTAL DRAFT EIS

This Supplemental Draft EIS has been prepared to assist decision-makers and the public in understanding how a refined design of the proposed LPA, the adjustment of project opening years, and the decision to construct the project in two phases would compare to the Metrorail Alternative evaluated in the Draft EIS. A comparative evaluation of a No Build Alternative and associated costs is also included.

The most significant difference between the proposed LPA and the Metrorail Alternative evaluated in the Draft EIS is the incremental construction of Metrorail service in two phases under the proposed LPA. The initial construction of the proposed LPA would provide service in 2009 and extend Metrorail service as far as Wiehle Avenue (proposed LPA Phase 1). Subsequent extension of Metrorail service west of Wiehle Avenue to Dulles Airport and Loudoun County would be implemented in 2015. This phasing would require facilities to support the use of the Wiehle Avenue Station as a terminal station until the remainder of the Metrorail extension is completed, as well as improvements to the West Falls Church Yard to support the operation of proposed LPA Phase 1.

To facilitate public understanding of the modifications associated with the proposed LPA, including design modifications, this Supplemental Draft EIS evaluates the following alternatives:

- The No Build Alternative (the baseline for comparison);
- The Metrorail Alternative (T6/Y15) (the original Locally Preferred Alternative); and
- The proposed LPA (including the implementation of LPA Phase 1 in 2009 and full implementation in 2015).

All the alternatives have been evaluated for the forecast horizon year of 2025. Because certain predicted effects of proposed LPA Phase 1 vary depending on the year in which they are analyzed, the impacts and benefits of

proposed LPA Phase 1 are described for both opening year (2009) and the forecast horizon year (2025) to facilitate comparison across all alternatives.

Table 2.2-1 summarizes the major characteristics of these alternatives. The alignment, stations, ancillary facilities, operational characteristics, and costs associated with each of the alternatives are discussed in detail below.

**Table 2.2-1: Alternatives Evaluated in the Supplemental Draft EIS**

| Characteristics | Draft EIS | | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|
| | **No Build Alternative** | **Metrorail Alternative (T6/Y15)** | **Full LPA** | **LPA Phase 1 2025** | **LPA Phase 1 Opening Year** |
| New Metrorail Service | - | 23.1 miles | 23.1 miles | 11.6 miles | 11.6 miles |
| New Metrorail Stations | - | 11 | 11 | 5 | 5 |
| Yard Facilities | - | Site Y15 and Improvements to West Falls Church S&I Yard | Site Y15 and Improvements to West Falls Church S&I Yard | Improvements to West Falls Church S&I Yard | Improvements to West Falls Church S&I Yard |
| Ancillary Facilities | - | 21 traction power substations, 7 tie-breaker stations, 24 stormwater facilities | 21 traction power substations, 7 tie-breaker stations, 24 stormwater facilities | 11 traction power substations, 4 tie-breaker stations, 11 stormwater facilities | 11 traction power substations, 4 tie-breaker stations, 11 stormwater facilities |
| Operating Characteristics | 5-30 minutes peak period service | 6 minutes peak period service | 6 minutes peak period service | 6 minutes peak period service | 6 minutes peak period service |
| | 30-60 minutes off peak period service | 12 minutes off peak period service | 12 minutes off peak period service | 12 minutes off peak period service | 12 minutes off peak period service |
| Capacity Improvements to Existing Metrorail System | Additional capacity improvements to meet forecast increases in travel demand (eight-car train operations) | No additional capacity improvements than those included in the No Build Alternative | No additional capacity improvements than those included in the No Build Alternative | No additional capacity improvements than those included in the No Build Alternative | No additional capacity improvements than those included in the No Build Alternative |
| Premium and Other Bus Service | No Premium Bus Service provided | No Premium Bus Service provided | No Premium Bus Service provided | Premium Bus Service provided | Premium Bus Service provided |
| | Existing Metrobus, Fairfax Connector and Loudoun County Bus Services; Fairfax and Loudoun Counties planned transit improvements (Enhanced Express Bus) in the Dulles Corridor; marginal increases in local transit service to meet demand | Local bus service provided by WMATA, Fairfax Connector, and Loudoun County would be re-configured to act as feeder into proposed Metrorail stations as part of the project. Bus services currently running as express into Washington, D.C. and the West Falls Church | Local bus service provided by WMATA, Fairfax Connector, and Loudoun County would be re-configured to act as feeder into proposed Metrorail stations as part of the project. Bus services currently running as express into Washington, D.C. and the West Falls Church | Local bus service provided by WMATA, Fairfax Connector, and Loudoun County would be re-configured to act as feeders into proposed Metrorail or premium bus stations as part of the project. Bus services currently running as express into Washington, D.C. and the West | Local bus service provided by WMATA, Fairfax Connector, and Loudoun County would be re-configured to act as feeders into proposed Metrorail or premium bus stations as part of the project. Bus services currently running as express into Washington, D.C. and the West Falls Church Metrorail |

| Characteristics | Draft EIS | | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|
| | **No Build Alternative** | **Metrorail Alternative (T6/Y15)** | **Full LPA** | **LPA Phase I 2025** | **LPA Phase I Opening Year** |
| | | Metrorail Station would be replaced by Metrorail or re-configured to terminate at one of the proposed stations. | Metrorail Station would be replaced by Metrorail or re-configured to terminate at one of the proposed stations. | Falls Church Metrorail Station would be replaced by Metrorail or premium bus, or re-configured to terminate at one of the proposed stations or premium bus station. | Station would be replaced by Metrorail or premium bus, or re-configured to terminate at one of the proposed stations or premium bus station. |
| Highway | Existing highways and planned highway improvements through 2025 included in MWCOG constrained long-range transportation plan (CLRP) | No additional improvements than those included in CLRP | No additional improvements than those included in CLRP | No additional improvements than those included in CLRP | No additional improvements than those included in CLRP |

### 2.2.1 NO BUILD ALTERNATIVE

The No Build Alternative includes all existing highway and transit infrastructure and services within the corridor, and any that are committed to be implemented by 2025, aside from the Dulles Corridor Rapid Transit Project. The following elements are included:

- Existing highways;
- Existing Metrorail infrastructure;
- Existing Metrobus, Fairfax Connector, and Loudoun County bus services;
- Fairfax and Loudoun counties' planned transit improvements included in Phase II (Enhanced Express Bus) of the Dulles Corridor phased implementation program;
- Planned highway and transit improvements through 2025 included in the Metropolitan Washington Council of Government's (MWCOG's) 2000 financially constrained long-range plan (CLRP);
- Marginal increases in local transit service and capacity commensurate with forecast population growth in the corridor through 2025; and
- Additional capacity improvements to the existing Metrorail system needed to meet forecast increases in travel demand. Implementation of eight-car train operations in the Metrorail system entails rail car procurement, expansion of maintenance and storage facilities, and the upgrading of the power distribution and train control system.

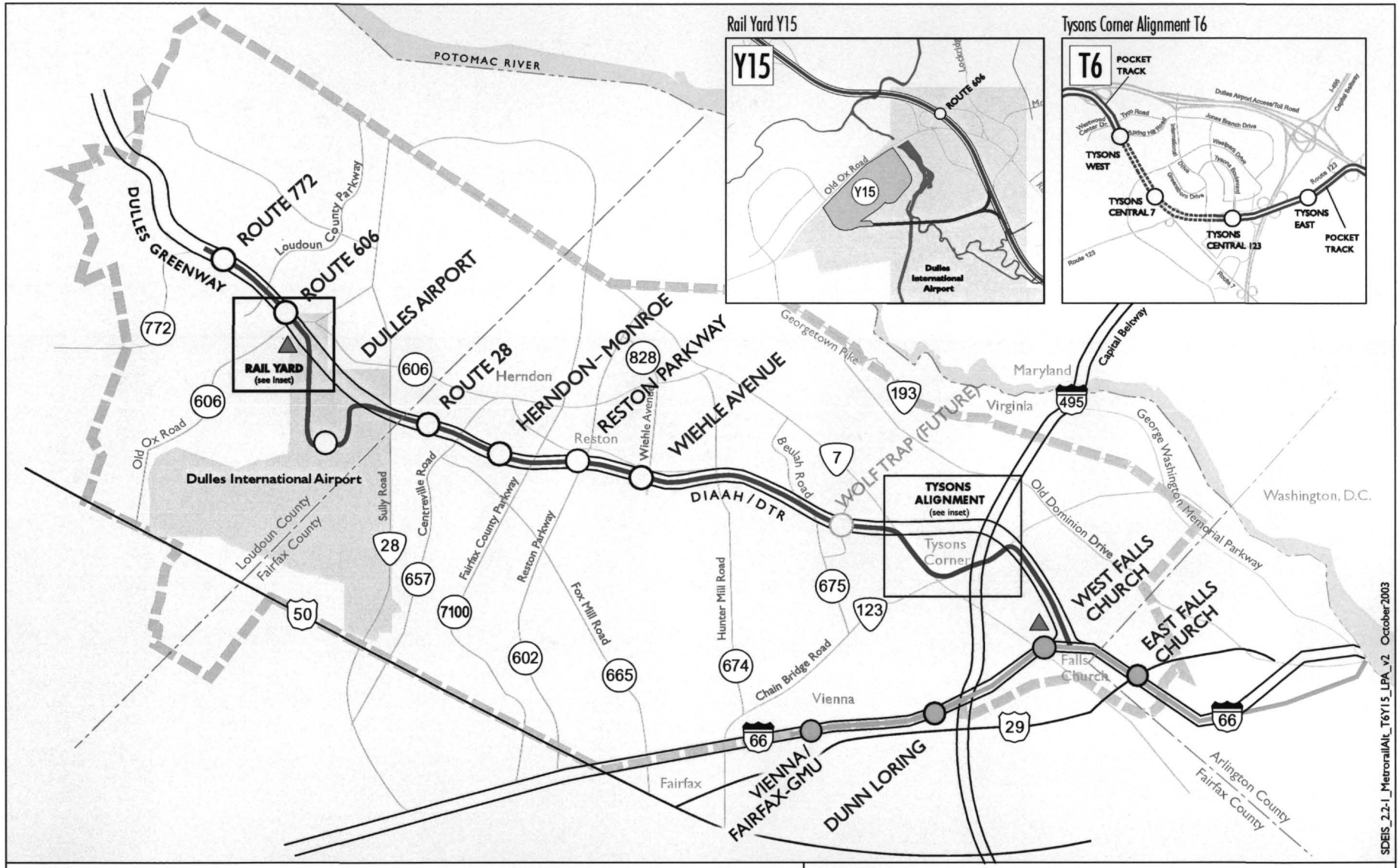
The No Build Alternative for this Supplemental Draft EIS is the same as the Baseline Alternative defined in the Draft EIS. Specific projects included in the No Build Alternative will be the subject of other independent environmental review processes to comply with NEPA as appropriate.

### 2.2.2 METRORAIL ALTERNATIVE (T6/Y15)

The Metrorail Alternative is comprised of the Metrorail T6 Alignment and the S&I Yard Site 15 from the Draft EIS and generally follows an alignment between the Metrorail Orange Line near West Falls Church Station and Route 772 in Loudoun County, using the median of the Dulles Connector Road, the DIAAH, and the Dulles Greenway (Figure 2.2-1). The alignment diverges from these routes to serve Tysons Corner and Dulles Airport. The Metrorail Alternative (T6/Y15) would include 11 new stations, as well as ancillary facilities, such as a new Metrorail S&I Yard at Site 15, traction power substations, tie-breaker stations, and stormwater management ponds. The Metrorail Alternative (T6/Y15) would include 6-car trains operating at headways of 6 minutes during the peak period, and a mix of 4- and 6-car trains operating at 12-minute headways in the off-peak period. The alternative would also include operating plans for bus routes feeding into rail stations within the corridor, as well as regional routes running the full length of the corridor. The Metrorail Alternative (T6/Y15) was evaluated in the Draft EIS and is compared to the proposed LPA and proposed LPA Phase 1 in this Supplemental Draft EIS.

Stations associated with the Metrorail Alternative would include the following:

- **Tysons East Station** would be an aerial facility located at the intersection of Scotts Crossing Road/Colshire Drive and Route 123.
- **Tysons Central 123 Station** would be a partially retained fill, partially aerial facility located in the central core of Tysons Corner at the intersection of Route 123 and Tysons Boulevard.
- **Tysons Central 7 Station** would be an underground facility located near the Pike 7 Plaza between the Route 7/Westpark Drive intersection and the Route 123/Route 7 interchange.
- **Tysons West Station** would be an aerial facility located on Route 7 between Westwood Center Drive/Tyco Road and Spring Hill Road.
- **Wiehle Avenue Station** would be an at-grade facility located along the Dulles Toll Road adjacent to the existing Reston East Park-and-Ride, west of the Wiehle Avenue overpass.
- **Reston Parkway Station** would be an at-grade facility located along the Dulles Toll Road, west of the Reston Parkway overpass.
- **Herndon-Monroe Station** would be an at-grade facility located along the Dulles Toll Road adjacent to the existing Herndon-Monroe Park-and-Ride, between the Fairfax County Parkway and Monroe Street overpasses.
- **Route 28 Station** would be an at-grade facility located along the Dulles Toll Road, between Centreville Road and the Dulles Toll Road/Route 28 interchange.
- **Dulles Airport Station** would be an underground facility located beneath the surface parking in front of the airport's main terminal.




LEGEND

- Major Arterials
- Limited Access Highway
- U.S. Highways
- Rail Yard
- Proposed Metrorail Alignment
- Proposed Metrorail Alignment Underground
- Dulles Corridor Limits
- Existing Metrorail Orange Line and Stations
- Proposed Station
- Future Station

0 1 2 3 MILES

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

Figure 2.2-1

# Metrorail Alternative (T6/Y15)

Dulles Corridor Rapid Transit Project

- **Route 606 Station** would be an at-grade facility located along the Dulles Greenway, west of the Route 606/Dulles Greenway interchange.
- **Route 772 Station** would be an at-grade facility located along the Dulles Greenway, east of the Route 772/Dulles Greenway interchange.

The Metrorail Alternative (T6/Y15) would be served by the existing West Falls Church S&I Yard and by a new S&I Yard in Loudoun County. A new yard lead would be provided into the West Falls Church S&I Yard. The yard lead would connect to the loop track on the north side of the yard, extending eastward and passing under the eastbound travel lanes of the Dulles Connector Road before surfacing in the median of the Dulles Connector Road. Here, the lead would be located between the inbound and outbound revenue service tracks. The new 70- to 90-acre S&I Yard would be located south of Route 606 and west of Horsepen Lake on Dulles Airport property to the north of a future runway. The new S&I Yard would be used for storage, maintenance, inspections, and repairs of approximately 184 Metrorail vehicles. Metrorail vehicles would access the new S&I Yard via lead tracks diverging from the alignment just east of the Route 606 interchange by crossing Horsepen Run. It would have several buildings, including an operations and field base building, an S&I shop, and a car wash. The yard would also include a traction power substation, a tie-breaker station, stormwater management facilities, and storage areas for materials. Approximately half of the site is in the runway approach surface. To be consistent with MWAA policies regarding construction in the runway approach surface, occupied buildings on the yard site would be located outside the approach surface.

The Metrorail Alternative (T6/Y15) would require three types of ancillary facilities to operate service: traction power substations, tie-breaker stations, and stormwater management facilities. Traction power substations are typically one-story buildings of approximately 8,100 square feet that house facilities to supply direct current power for the rail system. Tie-breaker stations are one story buildings of approximately 900 square feet that house equipment to break the rail line into sections, allowing power in one or more sections to be shut down for maintenance without affecting the power supply to the rest of the system. The Metrorail Alternative (T6/Y15) would include 21 traction power stations and 7 tie-breaker stations. The Metrorail Alternative (T6/Y15) would also require that stormwater management facilities be added along the Dulles Toll Road and Dulles Greenway. Emergency access shafts would be required for underground segments longer than 2,500 feet.

### 2.2.3 PROPOSED LOCALLY PREFERRED ALTERNATIVE (LPA)

The facilities associated with the proposed LPA would be similar to those described above for the Metrorail Alternative (T6/Y15) in terms of alignment, stations, facilities, and operating characteristics. The proposed LPA is illustrated in Figure 2.2-2. In general, the major differences between the proposed LPA and the Metrorail Alternative (T6/Y15) are as follows:

- The proposed LPA would be implemented in two phases. Initially, Metrorail service would be provided from the existing Orange Line (between the East Falls Church and West Falls Church stations) to Wiehle Avenue by 2009 (proposed LPA Phase 1). Metrorail service west of Wiehle Avenue to Dulles Airport and Loudoun County would be provided by 2015 in the full LPA.
- In order to accommodate the operation of the proposed LPA or proposed LPA Phase 1, the existing West Falls Church S&I Yard would be improved within existing public right-of-way to accommodate more rail cars. In order to reduce the potential for noise impacts, a sound attenuation box would be constructed over the yard's existing loop track and a portion of the lead-in track from the Dulles Line.

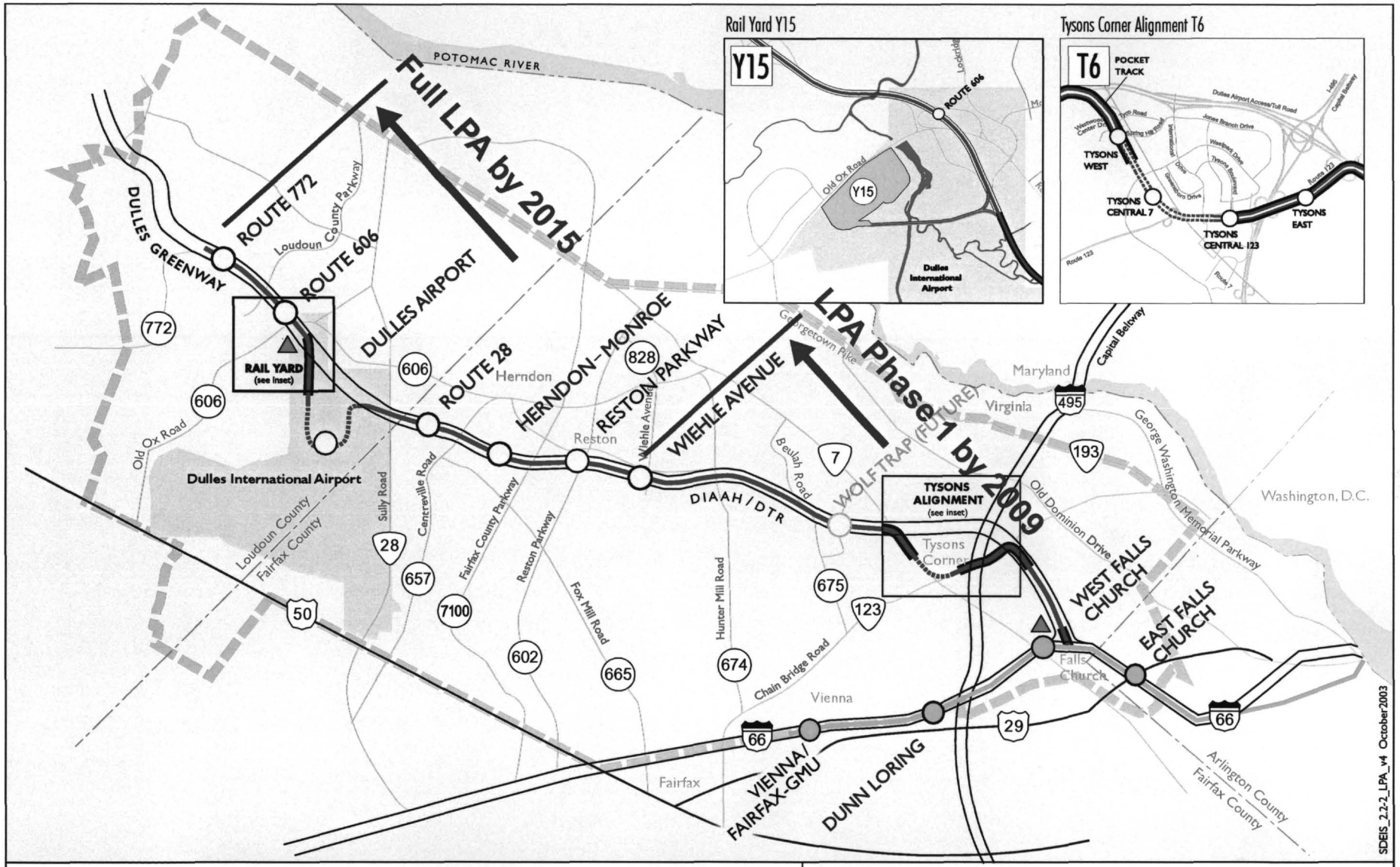
- Under proposed LPA Phase 1, the parking structure at Wiehle Avenue Station would no longer rely on joint development for implementation, as the parking is required to accommodate project ridership in 2009 as an interim "end-of-line" station.
- Under proposed LPA Phase 1, an interim premium bus service would be operated in the western portion of the corridor until rail service could be extended.
- Alignment plans and profiles have been adjusted and refined for a variety of purposes including reducing potential noise impacts, visual impacts, and costs, or to improve operational efficiency.
- Site plans for several stations have been modified to meet adjustments in parking programs and bus bays, improve access and circulation, and respond to the concerns of local jurisdictions and landowners.
- Design modifications of ancillary facilities including traction power substations, tie-breaker stations, and stormwater management ponds have been made.

Proposed LPA Phase 1 would extend from the existing Metrorail Orange Line, through Tysons Corner, to Wiehle Avenue, and would begin operations in 2009 (see Figure 2.2-3). The Wiehle Avenue Station would serve as an interim terminal station. The number of bus bays at the station would be increased, and Kiss & Ride spaces may be increased. No additional long-term parking would be provided for the interim terminal station beyond the 2,300 spaces included in the Metrorail Alternative (T6/Y15). Proposed LPA Phase 1 would include construction of a pocket track located west of Wiehle Avenue Station and interim tail tracks.

Proposed LPA Phase 1 would require improvements to the West Falls Church S&I Yard including construction of eight storage tracks and expansion of the existing Service and Inspection Shop Building. Improvements to the Service and Inspection Shop Building include the addition of two service tracks with up to eight maintenance bays. Expansion of the Service and Inspection Shop Building would require relocation of the current vehicle access road and construction of a retaining wall adjacent to the westbound lanes of I-66. These modifications would occur within existing public right-of-way and would not preclude future improvements to I-66. Some employee parking, loading docks, and ramps would also be relocated within the yard.

Proposed LPA Phase 1 would also include premium bus service between Wiehle Avenue Station and stations/stops in the western end of the corridor, providing a level of service meant to closely replicate Metrorail service. It would consist of the five routes or route families described below:

- **Loudoun 101.** This route would operate between Route 772, Dulles North Transit Center, and Wiehle Avenue, with stops at the Herndon-Monroe Park-and-Ride during the off-peak period. Service frequencies during the peak period would be 6 minutes in the peak direction and 20 minutes in the off-peak direction. Service frequencies in the off-peak period would be 20 minutes in each direction.
- **Loudoun 102.** This route would operate between Route 772, Dulles Airport, and Wiehle Avenue. This service would operate with 30-minute frequencies all day in both directions. In addition, after stopping at Wiehle Avenue, this service would continue to Reston Town Center to provide a direct connection to Reston Town Center for Loudoun County residents.
- **Loudoun 103.** This route would operate between Dulles Airport and Wiehle Avenue all day in both directions on 30-minute frequencies. This service would also continue to Reston Town Center after stopping at Wiehle Avenue.




LEGEND

- Major Arterials
- Limited Access Highway
- U.S. Highways

Proposed Metrorail Alignment

- At-grade/Retained Fill
- Aerial
- Underground
- Aerial Yard Lead

- Existing Metrorail Orange Line and Stations
- Proposed Station
- Proposed Underground Station
- Future Station
- Rail Yard
- Dulles Corridor Limits

0 1 2 3 MILES

Note: Short bridge crossings for highway and culvert overpasses/underpasses not shown.

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

Figure 2.2-2

# Proposed Locally Preferred Alternative

Dulles Corridor Rapid Transit Project

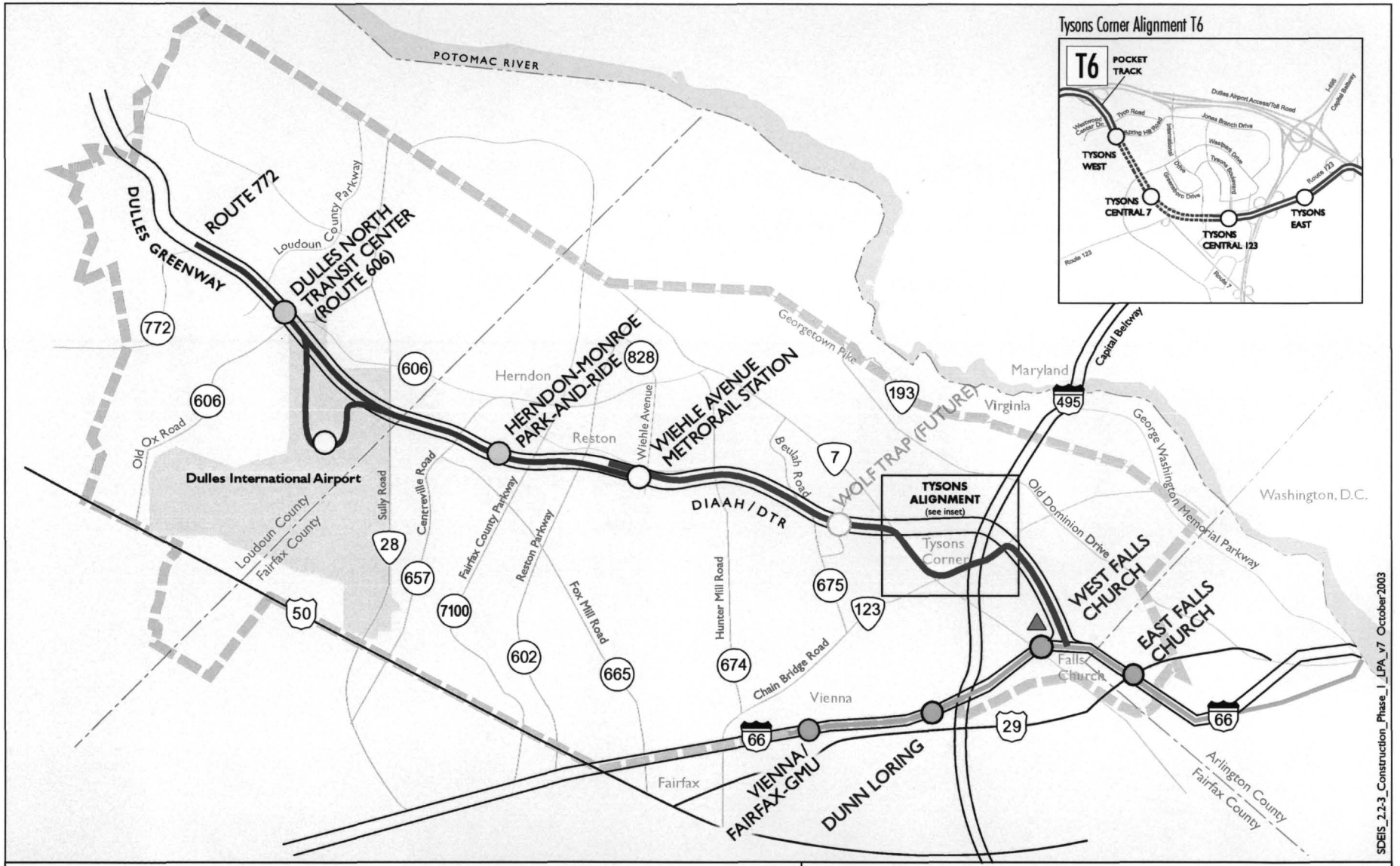
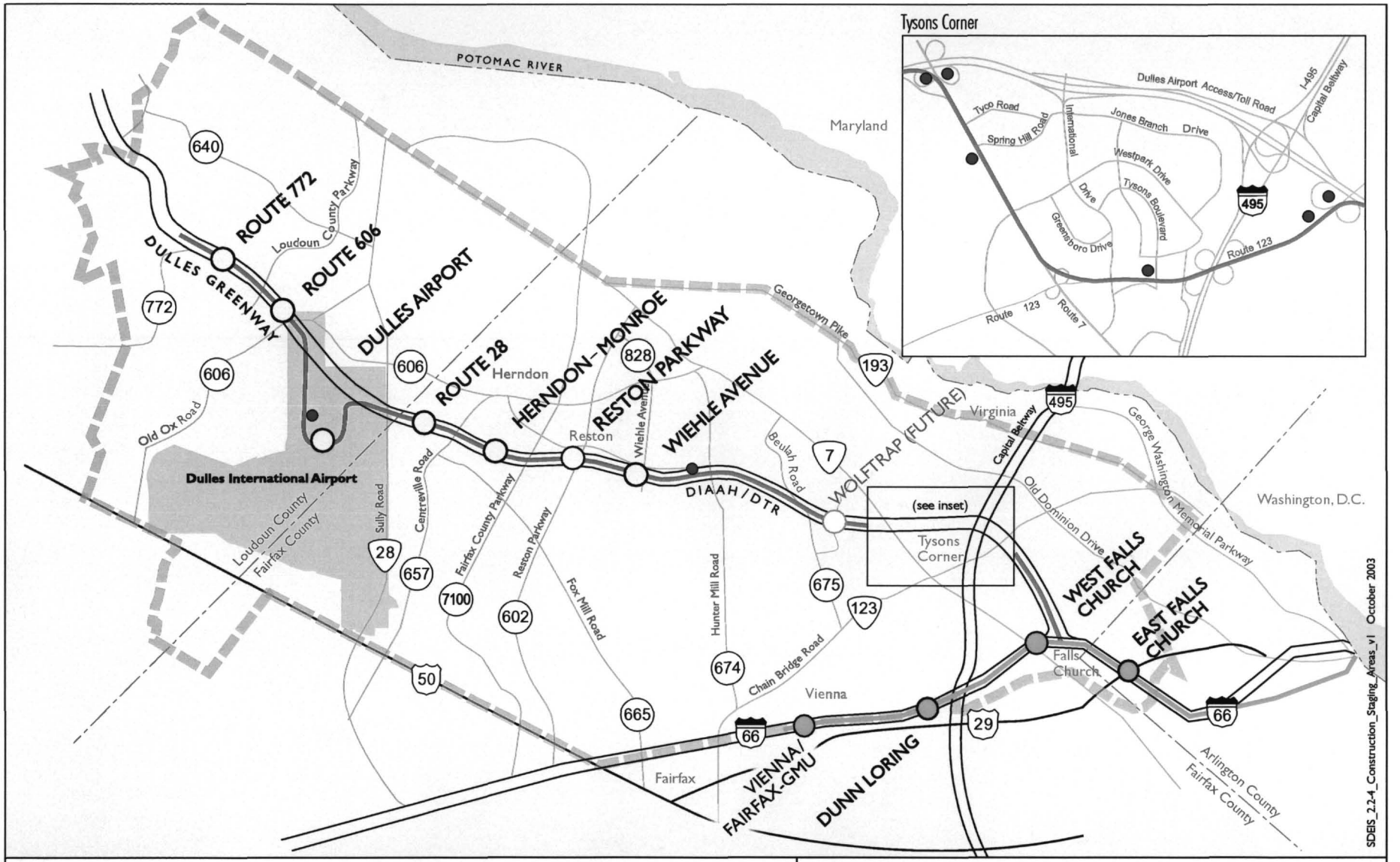



Figure 2.2-3

# Proposed Locally Preferred Alternative Phase 1

Dulles Corridor Rapid Transit Project




LEGEND

- Construction Staging Areas
- Existing Metrorail Orange Line and Stations
- Proposed Metrorail Station
- Future Station
- Dulles Corridor Limits
- Limited Access Highway
- U.S. Highways
- Major Arterials
- Proposed Metrorail Alignment

Note: All proposed station facilities areas are potential contractor work areas.

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

0 1 2 3 MILES

Figure 2.2-4

## Construction Staging Areas

Dulles Corridor Rapid Transit Project

- **FXC 920 series.** This series is a group of Fairfax Connector routes that currently serve Reston and Herndon and then feed into the Herndon-Monroe Park-and-Ride. Under LPA Phase 1, these routes would continue to Wiehle Avenue after serving Herndon-Monroe. They would provide the same level of service as under the No Build Alternative and the LPA.
- **FXC 980.** This route is currently the high-frequency express route between Herndon-Monroe and West Falls Church. Under LPA Phase 1, this service would be truncated to act as a high-frequency shuttle service between Herndon-Monroe and Wiehle Avenue. This service would run every six minutes in the peak direction during the peak period.

Due to anticipated demand in Loudoun County, LPA Phase 1 would also involve the construction of additional parking. A new surface lot, with 830 spaces, would be constructed within the footprint of the proposed Route 606 Station for the LPA. In combination with the existing 750 spaces located at the adjacent Dulles North Transit Center, total parking after the completion of LPA Phase 1 would be 1,580 surface spaces.

Completion of the proposed full LPA would extend Metrorail service from the existing Metrorail Orange Line, through Tysons Corner and Dulles Airport, to Route 772 in Loudoun County. At the Route 606 Station, this phase would include the conversion of the 830-space surface lot to a 2,000-space parking structure, as well as construction of the new S&I Yard on Dulles Airport property. The proposed full build LPA would be in operation by 2015. As shown in Figure 2.2-4, both construction phases would include construction staging areas at multiple locations throughout the Dulles Corridor, as appropriate to the portion of the alignment under construction.

### 2.2.4 COMPARATIVE EVALUATION OF ALTERNATIVES

Table 2.2-2 provides a summary of the anticipated effects of the alternatives evaluated in the Supplemental Draft EIS. Results are summarized for the No Build Alternative, the Metrorail Alternative (T6/Y15) and the proposed LPA, including LPA Phase 1. These effects and proposed mitigation are discussed in more detail in Chapters 3 through 9. For proposed LPA Phase 1, effects are the same for years 2009 and 2025 except where noted.

**Table 2.2-2: Summary of Effects**

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Transit Operations | | | | | | |
| Opening Year Total Ridership[1] | Not Applicable | 71,900 | 6,200 | 78,100 | Not Applicable | 56,600 |
| Opening Year Metrorail Ridership | Not Applicable | 71,900 | 6,200 | 78,100 | Not Applicable | 53,600 |
| Opening Year New Riders[1] | Not Applicable | 32,600 | 4,600 | 37,200 | Not Applicable | 36,700 |
| Forecast Year Total Ridership[1] | Not Applicable | 86,900 | 500 | 87,400 | 71,300[2] | Not Applicable |
| Forecast Year Metrorail Ridership[1] | Not Applicable | 86,900 | 500 | 87,400 | 67,700 | Not Applicable |
| Forecast Year New Riders[1] | Not Applicable | 38,300 | 1,000 | 39,300 | 30,000 | Not Applicable |
| Peak Period Headways | 5 - 30 min. | 6 min. | None | 6 min. | 6 min. | 6 min. |
| Non-Peak Period Headways | 30 - 60 min. | 12 min. | None | 12 min. | 12 min. | 12 min. |

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| **Costs**[4] | | | | | | |
| Capital Costs (by Year of Expenditure) | $0 | $3.1B | $0.3B | $3.4B | $1.5B | $1.5B |
| Capital Funding Sources[5] | Not Applicable | 50% Federal 50% Non Federal | None | 50% Federal 50% Non Federal | 50% Federal 50% Non Federal | 50% Federal 50% Non Federal |
| Incremental Annual O&M Costs (YOE Dollars) | Not Applicable | $179.4M | None | $179.4M | $101.6M | $48.7M |
| **Social Effects** | | | | | | |
| *Land Use* | | | | | | |
| Compatible with Existing Land Use | Yes | Yes | None | Yes | Yes | Yes |
| Consistent with Comprehensive Plans | No | Yes | None | Yes | Partial | Partial |
| Compatible with Planned Development | No | Yes | None | Yes | Partial | Partial |
| Consistent with Local Zoning | Yes | Yes | None | Yes | Yes | Yes |
| *Neighborhood Effects* | | | | | | |
| Community Facility Impacts | None | 2 | None | 2 | 1 | 1 |
| Property Value Increase at Stations | Unlikely | Likely | None | Likely | Likely | Likely |
| Residential Displacements (No.) | 0 | 0 | None | 0 | 0 | 0 |
| Residential Properties Partially Acquired (No.) | 0 | 12 | +4 | 16 | 15 | 15 |
| Shifts in Population and Employment | Unlikely | Likely | None | Likely | Likely | Likely |
| Community Cohesion | Continue Current Conditions | No Effect | None | No Effect | No Effect | No Effect |
| Noise and Vibration (No. of Neighborhoods Affected) | 0 | 12 | None | 12 | 12 | 12 |
| Commercial Displacements (No.) | 0 | 3 | +1/-2 | 2 | 2 | 2 |
| Commercial Properties Acquired (No.) | 0 | 64 | +11 | 75 | 45 | 45 |
| *Visual Effects* | | | | | | |
| Tysons Corner | No | Yes | Impact Reduced | Impact Reduced | Impact Reduced | Impact Reduced |
| W&OD Railroad Regional Park | No | Yes | None | Yes | Yes | Yes |
| Dulles Airport Historic District | No | Yes | Impact Reduced | Impact Reduced | No | No |
| *Effects on Archaeological Sites*[6] | | | | | | |
| Potential Adverse Effect (No.) | - | 4 | -1 | 3 | 0 | 0 |
| Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| *Effects on Historic Architectural Properties* | | | | | | |
| Potential Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |
| Adverse Effect (No.) | - | 0 | None | 0 | 0 | 0 |
| *Effects on Public Parklands (Section 4(f) and 6(f) Lands)* | | | | | | |
| Section 4(f) Constructive Use (No./Acres) | 0/0 | 0/0 | None | 0/0 | 0/0 | 0/0 |
| Section 4(f) Direct Use (No./Acres) | 0/0 | 0/0 | None | 0/0 | 0/0 | 0/0 |
| Section 6(f) Conversion of Use | 0 | 1 Potential | None | 1 Potential | 1 Potential | 1 Potential |
| *Disproportionate Impacts to Minority/Low Income Populations* | | | | | | |
| Neighborhoods without Service | 7 | 0 | None | 0 | 1 | 6 |
| Physical Impacts | None | None | None | None | None | None |
| **Environmental Effects** | | | | | | |
| *Effects on Geologic Resources* | | | | | | |
| Prime and Unique Farmland Soils (Acres) | None | None | None | None | None | None |
| Groundwater | None | Minor | None | None | None | None |
| *Effects on Water Resources* | | | | | | |
| Streams/Water Quality (linear feet) | 0 | 96 | +149 | 245 | 0 | 0 |
| Wetlands (Acres) | 0 | 5.0 | -0.1 | 4.9 | 0.1 | 0 |
| Floodplains (No. of 100-year crossings) | 0 | 5 | None | 5 | 3 | 3 |
| *Effects to Habitat and Biota* | | | | | | |
| Stormwater Runoff | Continues Current Conditions | More Impervious | None | More Impervious | Reduced Impervious | Reduced Impervious |
| Effects on Prime Uplands[10] | 0 | 1 | None | 1 | 0 | 0 |
| Stream Effects | 0 | 2 | None | 2 | 0 | 0 |
| Diabase Glade Habitat | 0 | 0 | None | 0 | 0 | 0 |
| Effects on Rare, Threatened, and Endangered Species | 0 | 0 | None | 0 | 0 | 0 |
| *Air Quality* | | | | | | |
| Improved Vehicles Emissions | Yes | Yes | None | Yes | Yes | Yes |
| Contribution to Regional Goals | No | Yes | None | Yes | Partial | Partial |
| Reduction in Regional VMT (Miles) | - | 257.4M | None | 257.4M | 192.1M | 214.5M |
| NAAQS Violations | No | No | None | No | No | No |
| *Noise and Vibration*[7] | | | | | | |
| Noise Receptors Above FTA Criteria Before Mitigation | - | 119 | None | 119 | 119 | 119 |
| Vibration Receptors Above FTA Criteria Before Mitigation | - | 16 | None | 16 | 16 | 16 |

| | Draft EIS | | Changes in Effects (Metrorail T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Groundborne Noise Receptors Above Criteria | - | 11 | None | 11 | 11 | 11 |
| Hazardous Materials Sites Potentially Effected | - | 16 | +1 | 17 | 7 | 7 |
| Energy Usage (Percent change from No Build) | - | +3.7% | None | +3.7% | +1.26% | +0.31% |
| **Economic Effects** | | | | | | |
| Total Transit Employees | 8,990 | +601 | None | +601 | +520 | +520 |
| Corridor Population[8] | 339,497 | +11.0% | None | +11.0% | +4.5% | +2.1% |
| Corridor Employment[8] | 403,857 | +16.0% | None | +16.0% | +6.3% | +3.0% |
| Corridor Development in (Million Square Feet)[8] | 301.31 | +15.0% | None | +15.0% | +5.4% | +2.5% |
| **Transportation Effects** | | | | | | |
| Number of Intersections at LOS F – a.m.[9] | 20 | 21 | None | 20 | 6 | Not Available |
| Number of Intersection at LOS F – p.m.[9] | 16 | 17 | None | 17 | 6 | Not Available |
| Number of Intersections Requiring Mitigation as a Result of Project | - | 9 in 2025 | 0 in 2025 | 9 in 2025 | 0 | 5 |
| Consistent with Transportation Plans | Partial | Yes | None | Yes | Partial | Partial |
| **Secondary and Cumulative Effects** | | | | | | |
| ***Potential for Effects Related to Secondary Development*** | | | | | | |
| Population Increase at Stations | - | 0% - 986% | None | 0% - 986% | 13% - 986% | 13% - 329% |
| Employment Increase at Stations | - | 13% - 236% | None | 13% - 236% | 16% - 29% | 7% - 29% |
| Additional Demand for Public Services | - | Yes | None | Yes | Less than Full LPA | Less than Full LPA |
| Change in Visual Character at Stations | - | Yes | None | Yes | East of Wiehle Ave. | East of Wiehle Ave. |
| ***Contribution of Project to Cumulative Effects*** | | | | | | |
| Change in Development Character | - | Yes | None | Yes | East of Wiehle Ave. | East of Wiehle Ave. |
| Effect on Undeveloped Land in Loudoun County | - | Yes | None | Yes | No | No |
| Linkage Between Transportation and Secondary Development | - | Strong | None | Strong | Weaker than with Full LPA | Weaker than with Full LPA |
| Effect on Transportation Demand Management Strategies | - | Strong | None | Strong | Weaker than with Full LPA | Weaker than with Full LPA |

1 Average weekday riders.
2 Includes 3,900 premium bus riders.
3 Percent increase in a.m. peak n the eastbound direction at Wiehle Avenue.
4 "B" – Billions, "M" - Millions.
5 Local refers to monies that would come from local jurisdictions as well as the Commonwealth of Virginia.
6 Likely that resources destroyed by previous construction. Potential effects if resources remain.
7 Planned mitigation measures will reduce impacts below FTA criteria.
8 Changes in population, employment, and development potential calculated for areas within 1/2-mile radius of proposed stations except in Tysons Corner, where a 1,600-foot radius was used. Changes added to totals for all TAZs in corridor.
9 LOS - Level of Service; Measure of performance of intersections: A being the best and F being the worst.
10 Prime uplands include areas of mature or pristine deciduous or other forest types that support wildlife populations.

## 2.3 DESCRIPTION OF THE PROPOSED LOCALLY PREFERRED ALTERNATIVE

This section provides a detailed description of the alignment and facilities associated with the proposed LPA Phase 1 and the proposed LPA. As described in previous sections, DRPT intends to construct the proposed LPA in two major phases (see Figure 2.3-1). The first phase, proposed LPA Phase 1, would construct the proposed LPA through the Wiehle Avenue Station, which would function as an interim terminal station while the proposed LPA is extended to Dulles International Airport and Loudoun County. Proposed LPA Phase 1 is anticipated to be complete in 2009, with the extension and completion of the proposed full LPA anticipated by 2015.

### 2.3.1 PROPOSED LPA PHASE 1

This section provides a detailed description of the alignment and facilities included in the proposed LPA Phase 1, as well as Metrorail operations and capital and operating costs associated with the alternative. Conceptual engineering drawings and station plans showing design refinements to the proposed LPA alignment and facilities since the publication of the Draft EIS, including the phasing of construction, are presented in the *Draft General Plans-Line, Systems & Facilities, October 2003, SDEIS Volume II* (General Plans). Additionally, General Plans drawings and limits of disturbance mapping is provided in the Appendix. Members of the public will have the opportunity to view the Draft General Plans and other project materials at the upcoming public hearings for this Supplemental Draft EIS. Chapter 11 of this document provides a more detailed discussion of the public hearings process.

#### 2.3.1.1 Proposed LPA Phase 1 Metrorail Alignment and Stations

Proposed LPA Phase 1 would connect to the Orange Line between the East Falls Church and West Falls Church stations. The tracks would diverge from the Orange Line tracks on flyover structures, turning north and first passing over the westbound lanes of I-66, then over the outbound bus ramp between the West Falls Church Station and the Connector Road. The tracks would continue on aerial structure to the median of the Connector Road, returning to grade just south of Idylwood Road.

Proposed LPA Phase 1 would diverge from the Dulles Connector Road at the Route 123 interchange, transitioning to aerial structure near Chain Bridge Road and passing through the Route 123 interchange on flyover bridges. The aerial alignment then runs along the north side of Route 123 to the Capital Beltway, with an aerial station (Tysons East Station) located in the northwest quadrant of the intersection of Scotts Crossing Road/Colshire Drive and Route 123. The Tysons East Station would be accessible from the street level on the north side of Route 123, and from a pedestrian bridge touching down on the south side of Route 123 near Colshire Drive. The station facilities along Colshire Drive would include bus bays and Kiss & Ride spaces.

From the Tysons East Station, the proposed LPA Phase 1 alignment would proceed west, passing over the Capital Beltway and continuing on to the core of Tysons Corner. The alignment would include two stations in the central core of Tysons Corner: Tysons Central 123 and Tysons Central 7. Neither of these stations would have Kiss & Ride or park-and-ride facilities, because the stations are intended to facilitate pedestrian and bus access to and from the surrounding land uses in the core of Tysons Corner and reduce automobile dependence.

The Tysons Central 123 Station would be located along Route 123 at the intersection with Tysons Boulevard and would be partially elevated and partially on retained fill. The station would have two entrances, one in the northwest quadrant of the intersection of Tysons Boulevard and Route 123, and one at Tysons Corner Center

mall on the south side of Route 123. The north station facilities would include bus bays and a new bus-only turn lane along the west side of Tysons Boulevard. The south station facilities would include bus facilities on the north side of the mall to provide feeder bus service to the station.

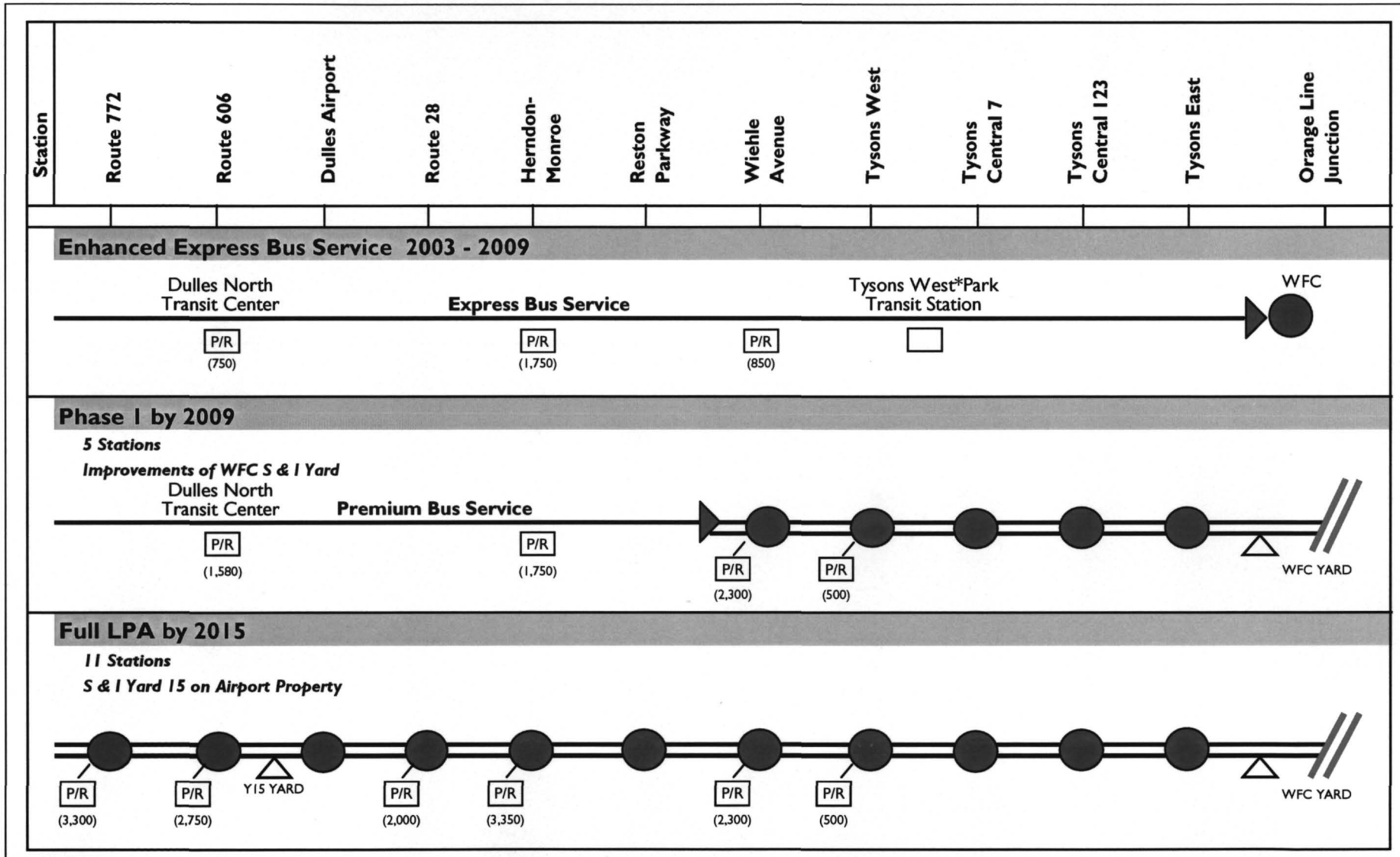
The proposed LPA Phase 1 alignment would transition underground approximately 400 feet west of the Tysons Central 123 Station. It would travel underground along the north side of Route 123 to the Route 123/Route 7 interchange, then continue underground along the south side of Route 7 to the Tysons Central 7 Station. The Tysons Central 7 Station would be underground near Pike 7 Plaza on the south side of Route 7, between the Route 7/Gosnell Road intersection and the Route 123/Route 7 interchange. The station would be approximately 75 feet below ground, with entrances on the north and south sides of Route 7. Underground walkways would provide access to the station. The Tysons Central 7 Station would not include off-street bus bays due to a projected lack of demand for bus service at this station.

West of Westpark Drive, proposed LPA Phase 1 would run along the south side of Route 7 to an aerial station (Tysons West Station) at the western edge of Tysons Corner. The Tysons West Station would be located on the south side of Route 7 between Westwood Center Drive and Spring Hill Road. The station would be accessible from the south side of Route 7 and from an entrance pavilion proposed on the north side of the Tyco Road/Route 7 intersection. At Tysons West Station, the 2,000-space park-and-ride structure included in the Metrorail Alternative (T6/Y15) would be eliminated. The station would include the Kiss & Ride spaces and feeder bus loop proposed for the first level of the parking structure in the Draft EIS, with a reconfigured layout on a smaller site. Parking at Tysons West Station would be reduced to 500 spaces and be constructed as part of a joint development project. The specific location and design of the park-and-ride facility is not known at this time, but the anticipated cost of the facility is assumed as part of the Dulles Corridor Rapid Transit Project. Vehicles would access the station facilities using local roads. The Tysons West Station would also include a pocket track west of the station platform. Pocket tracks are located between the main tracks and are used to temporarily store out-of-service trains or equipment, and to provide trains turn-around capability for short-run service.

West of the Tysons West Station, proposed LPA Phase 1 would continue along Route 7. At the DIAAH, the aerial alignment would pass over the interchange ramps and continue west on the DIAAH, transitioning to grade approximately 1,800 feet west of Route 7.

Continuing west along the DIAAH, the next segment of proposed LPA Phase 1 would include provisions to accommodate a future station at Wolf Trap National Park for the Performing Arts (Wolf Trap). A future station at Wolf Trap would be located in the median of the DIAAH in the vicinity of Trap Road. The Wolf Trap Station has been proposed as a special-use station serving Wolf Trap events and other park uses. To minimize the cost of construction and disruptions to transit operations should a station be built in the future, the initial design and construction of the Dulles Corridor Rapid Transit Project would incorporate some provisions for the future site, including a 1,400-foot-long section of retained fill to support the tracks.

Proposed LPA Phase 1 would continue at-grade in the median of the DIAAH 11.6 miles to the west to the Wiehle Avenue Station, a median station located approximately 500 feet west of the Wiehle Avenue overpass, where the Dulles Toll Road and DIAAH were previously realigned to accommodate a transit station in the median of the DIAAH. Station facilities on the south side of the Dulles Toll Road would include an entrance pavilion and a paved walkway extending from the pavilion to Wiehle Avenue.




LEGEND

- P/R — Park-and-Ride Lot
- Metrorail Station
- Service & Inspection (S & I) Yard
- Express Bus/Premium Bus Service

Figure 2.3-1

# Construction Phasing Diagram

Dulles Corridor Rapid Transit Project

In the Draft EIS, it was assumed that the 2,300-space parking structure at Wiehle Avenue Station would be developed as part of a joint development project. For proposed LPA Phase 1, the Wiehle Avenue park-and-ride structure is no longer assumed to be a joint development project, because the parking at this interim terminal location would be required for project use when operations commence. Two design options for the 2,300-space structure are being carried forward for detailed evaluation. Both options would make use of the existing parking lot of the Reston East Park-and-Ride and the self-storage parcel northwest of the park-and-ride. For Option A, the self-storage site would be used as temporary parking during construction of the park-and-ride structure on the existing parking site. The temporary parking would be converted to a joint development use when the new structure is complete. A second entrance to the new park-and-ride would be provided from Isaac Newton Drive, and Sunset Hills Road would be widened to accommodate a new turn lane for this entrance. For Option B, the new park-and-ride structure would be developed on the self-storage site, and the existing lots would be converted to joint development use after the new structure is complete. This option would also include a second entrance from Isaac Newton Square and the associated widening of Sunset Hills Road. Both options for the Wiehle Avenue Station facilities would include eight additional bus bays, for a total of 16 bus bays. General Plan Drawings and detailed limits of disturbance mapping is provided in the Appendix.

The proposed LPA Phase 1 alignment would end at a point approximately 2,000 feet west of the Wiehle Avenue Station. A tail track, including a center pocket track, would extend beyond the station and would be used for storing and dispatching trains. Up to four, eight-car trains could be stored overnight in the tail tracks and at the station. A paved access road between the tail tracks would allow car mechanics using electric carts and cleaning crews using push carts to reach the trains. Related facilities at the station would include dispatch and operations rooms, trash collection, and train operator welfare space including lockers and restrooms.

#### 2.3.1.2 Proposed LPA Phase I Metrorail Yard Facilities

The proposed LPA Phase 1 would require 96 additional Metrorail cars. These would be stored at three facilities: 42 at an improved West Falls Church S&I Yard; 18 to 20 at the existing New Carrollton S&I Yard; and 28 to 32 at the proposed tail tracks of Wiehle Avenue Station, at the station itself, and at existing stations throughout the system to facilitate efficient pull-out operations in the morning rush hour. The remaining 2 to 8 cars would be in shops for overnight regular maintenance at West Falls Church S&I Yard and New Carrollton S&I Yard.

As part of proposed LPA Phase 1, it is assumed eight storage tracks would be added to the northeast side of the existing West Falls Church S&I Yard, as well as a sound attenuation "cover box" over the yard's existing loop track and a portion of the yard lead. The storage tracks would have the capacity to store 42 rail cars with room to maneuver an additional 6 cars, and are expected to help facilitate Metrorail operations in the Dulles Corridor. These additions would be located within existing public right-of-way.

Proposed LPA Phase 1 would also require expansion of the existing Service and Inspection Shop Building. Improvements to the Service and Inspection Shop Building include the addition of two service tracks with up to eight maintenance bays. Expansion of the Service and Inspection Shop Building would require relocation of the current vehicle access road and construction of a retaining wall adjacent to the westbound lanes of I-66. Some employee parking, loading docks, and ramps would also be relocated within the yard. General Plan drawings and limits of disturbance maps showing the yard facilities and surrounding land uses are provided in the Appendix.

### 2.3.1.3 Proposed LPA Phase 1 Metrorail Ancillary Facilities

The traction power substations and tie-breaker stations included in proposed LPA Phase 1 were sited based on systems engineering requirements, environmental, and right-of-way constraints. A power analysis was conducted to determine the number and size of substations required and the optimal spacing for these stations. Based on this analysis, proposed LPA Phase 1 would include 11 traction power substations and 4 tie-breaker stations (see Figure 2.3-2).

Proposed LPA Phase 1 would also require 11 stormwater management facilities, most located along the Dulles Toll Road. The locations of these facilities are shown in Figure 2.3-3. Limits of disturbance maps showing the locations of the tie-breaker stations, traction power substations, and stormwater management ponds, and the land uses surrounding each are provided in the Appendix.

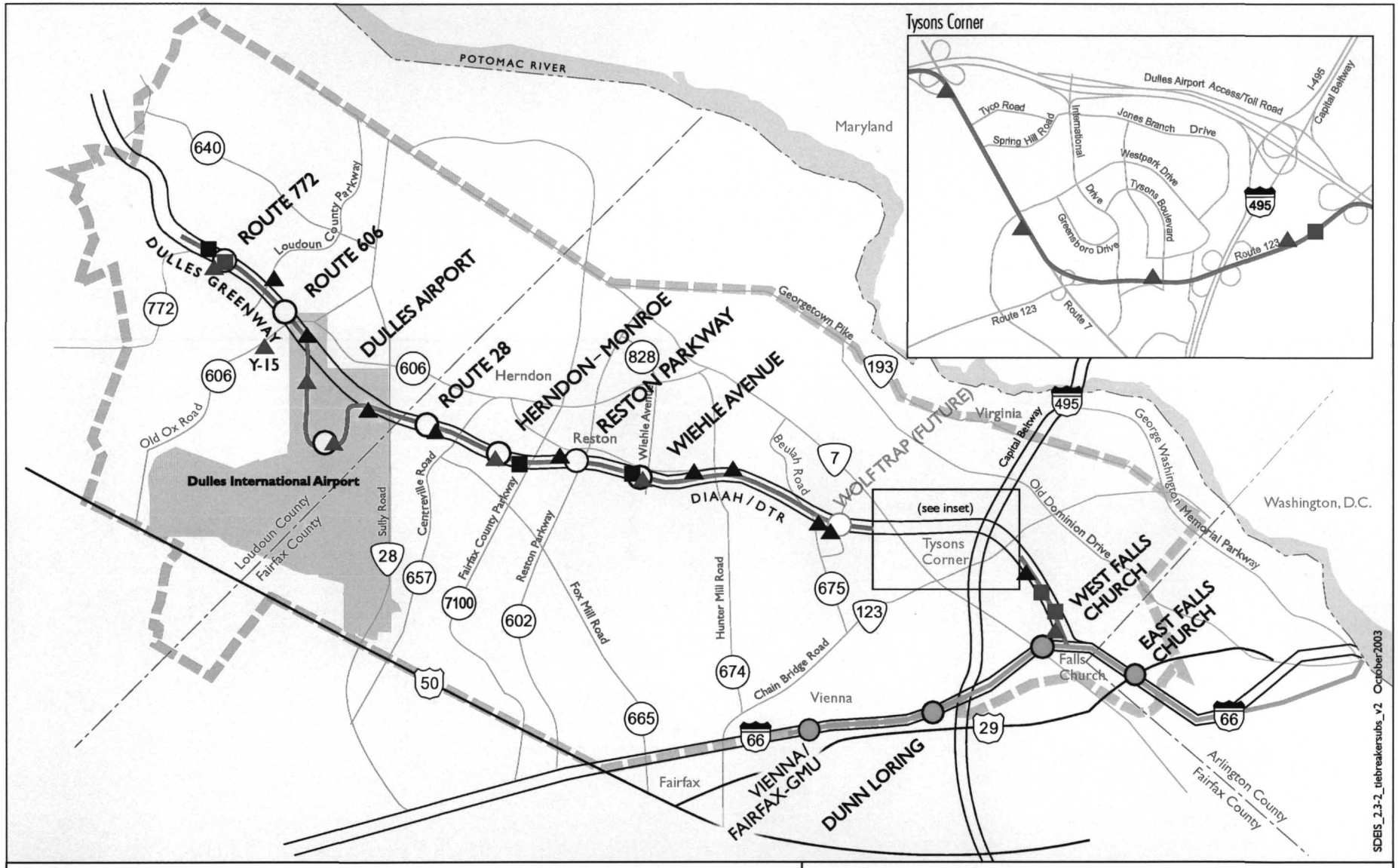
### 2.3.1.4 Proposed LPA Phase 1 Operations

Proposed LPA Phase 1 would include operating plans for trains running on the Dulles Line, on the existing Orange Line between the Vienna/Fairfax-GMU and New Carrollton stations, and on the Orange Line between West Falls Church and New Carrollton stations. It would also include operating plans for local bus routes feeding into rail stations within the corridor, as well as regional routes running the full length of the corridor.

Metrorail service would operate between Stadium-Armory Station on the Orange Line in the region's core and Wiehle Avenue in Fairfax County and would be integrated with the existing Orange Line service.

Orange Line trains currently operate between Vienna/Fairfax-GMU and New Carrollton on 6-minute headways in the peak hours (6 to 9:15 a.m. and 3 to 6:15 p.m. weekdays) and 12-minute headways during off-peak hours, except after 10 p.m., when trains run every 20 minutes. This service is supplemented by a peak-hour service in the morning and afternoon running in the peak direction between Vienna/West Falls Church and New Carrollton, also on 6-minute headways. The purpose of this supplemental service is to provide extra capacity during the "peak of the peak" when the heaviest passenger volumes on the Orange Line occur. This supplemental service results in 3-minute headways on the Orange Line in the peak direction between West Falls Church and New Carrollton during the morning and afternoon peak hours. The supplemental service trains are known as "trippers." The Orange Line currently uses six-car trains during the peak hours. A mix of four- and six-car trains is used during off-peak periods and for trippers.

Dulles Corridor service between Stadium-Armory Station and the Wiehle Avenue Station would run on 6-minute headways during the morning and afternoon peak periods, replacing the peak-hour supplemental service on the Orange Line (the "trippers"). Dulles Corridor service would be different than the existing supplemental service because it would enter the Orange Line between the West Falls Church and East Falls Church stations and would terminate at the Stadium-Armory Station rather than running all the way to New Carrollton, as the supplemental service now does. The combined Orange Line and Dulles Corridor services would result in 3-minute peak-period headways between the East Falls Church and Stadium-Armory stations. This service would operate in both directions throughout the entire peak period, as opposed to operating only during the peak hour, as is the case today. During the off-peak hours and over weekends, Dulles Corridor service would run on 12-minute headways, resulting in 6-minute combined headways on the Orange Line between East Falls Church and Stadium-Armory stations.




LEGEND

- Existing Metrorail Orange Line and Stations
- Proposed Metrorail Station
- Future Station
- Dulles Corridor Limits
- U.S. Highways
- Major Arterials
- Proposed Metrorail Alignment
- Limited Access Highway

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

- Tie - Breakers (TB)
- Traction Power Substations (TPSS)
- TB & TPSS outside the Right-of-Way

0 1 2 3 MILES

Figure 2.3-2

# Proposed Locations for Traction Power Substations and Tie-Breaker Stations

Dulles Corridor Rapid Transit Project

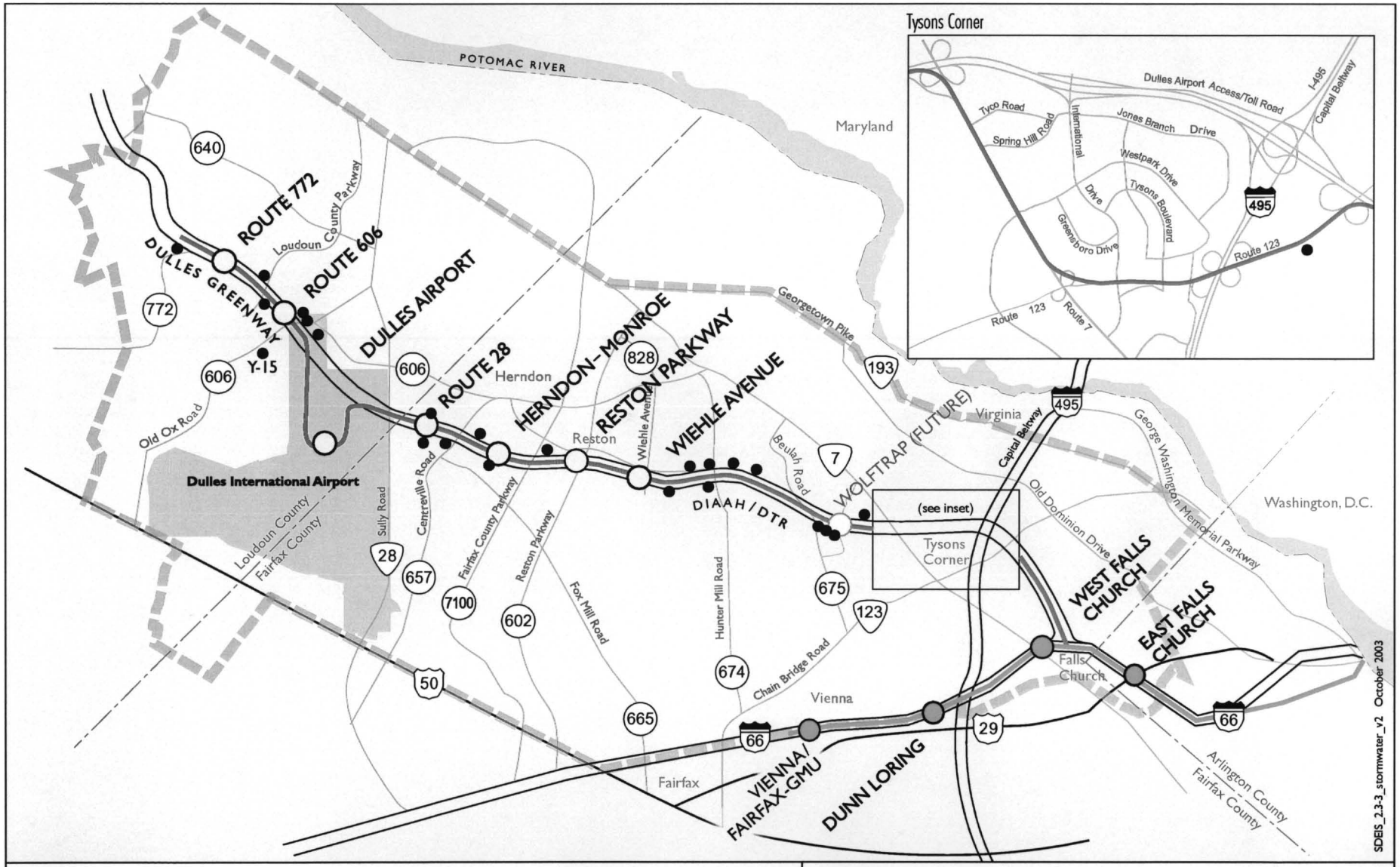



Figure 2.3-3

# Proposed Locations for Stormwater Management Facilities

Dulles Corridor Rapid Transit Project

The Orange Line service is projected to use eight-car trains in the peak period and a mix of four- and six-car trains in the off-peak. The Dulles Corridor service is projected to use six- and eight-car trains in the peak period and four-car trains in the off-peak. Both services would run during the same hours as current Metrorail service.

Proposed LPA Phase 1 would include an interim premium bus service for the western end of the corridor to provide enhanced transit service to travelers that would be served by the proposed full LPA. The operating plan would consist of several routes that provide connections between every station included in the full LPA, except Reston Parkway and Route 28, with service frequencies comparable to proposed Metrorail headways. These routes would feed the interim terminal station at Wiehle Avenue. In lieu of service to Reston Parkway, the operating plan for premium bus service would connect to the planned transit center at Reston Town Center. No service would be provided to the Route 28 Station included in the proposed LPA because access to the proposed station facilities from the highway is indirect, making it very difficult to serve this area effectively with premium bus service.

#### 2.3.1.5 Proposed LPA Phase 1 Costs

This section presents the capital costs and operations and maintenance costs associated with proposed LPA Phase 1.

##### Capital Costs

The total capital costs (excluding financing) of the proposed LPA Phase 1 are approximately $1.5 billion Year-of-Expenditure (YOE) dollars. These costs would be less for proposed LPA Phase 1 than the proposed full LPA due to the shorter alignment of this phase. Additional information regarding capital costs is provided in Chapter 8.

##### Operations and Maintenance Costs

The annual incremental operations and maintenance costs for proposed LPA Phase 1 in the opening year are estimated to be $48.7 million (Year of Expenditure (YOE) dollars) and $40.25 million annually in 2001 dollars. These costs for proposed LPA Phase 1 would be less than the proposed full LPA due to the shorter alignment under this phase. The annual operating and maintenance costs for premium bus service are estimated to be $2.8 million in 2025 (2001 dollars). Additional information regarding operations and maintenance costs is provided in Chapter 8.

### 2.3.2 PROPOSED LOCALLY PREFERRED ALTERNATIVE

This section provides a detailed description of the alignment and facilities included in the proposed LPA, as well as Metrorail operations and capital and operating costs associated with the alternative. Conceptual engineering drawings and station plans showing design refinements to the proposed LPA alignment and facilities since the publication of the Draft EIS are presented in the General Plans.

#### 2.3.2.1 Proposed LPA Metrorail Alignment and Stations

For portions of the proposed full LPA east of the Wiehle Avenue Station, the proposed full LPA Metrorail alignment and station facilities are the same as those included in proposed LPA Phase 1.

The second portion of the phased construction of the proposed full LPA would proceed west from the Wiehle Avenue Station at-grade in the median of the DIAAH, with median stations at Reston Parkway, Herndon-

Monroe, and Route 28. There would be small areas of cut and fill along the alignment, predominantly in the vicinity of these stations, to allow for level platforms.

The Reston Parkway Station would be located where the Dulles Toll Road and DIAAH were previously realigned to accommodate a transit station, approximately 1,000 feet west of the Reston Parkway overpass. The station would include access facilities on both the north and south sides of the Toll Road with feeder bus bays and Kiss & Ride spaces. No park-and-ride spaces would be provided at the Reston Parkway Station. Since the publication of the Draft EIS, the proposed access to the north side station facilities at the Reston Parkway Station was relocated from the east end of the Kiss & Ride area to the west end. Access for the facility would now be from Sunset Hills at an existing median break, rather than through the TRW parking lot.

The Herndon-Monroe Station would be located east of the Monroe Street overpass. The project would provide a pedestrian walkway between Herndon Parkway and the north entrance pavilion. On the south side, the entrance pavilion would be located at the existing Herndon-Monroe Park-and-Ride. Station facilities south of the DIAAH include feeder bus bays, Kiss & Ride spaces, and a parking garage with 1,750 park-and-ride spaces. The garage would be expanded to approximately 3,500 spaces as part of the project.

The Route 28 Station would be located east of the Route 28 interchange, north of the proposed Dulles Station development along Fox Mill Road. Fairfax County has proposed an overpass at a location just west of the station site. The location of this future overpass has been coordinated with Fairfax County to accommodate the entrance pavilions for the station. Station facilities on the north side of the Dulles Toll Road would include feeder bus bays and Kiss & Ride facilities. The facilities on the south side would cover a larger area and would include bus bays, Kiss & Ride spaces, and structured parking. Initially, 300 park-and-ride spaces would be provided for Metrorail users. Parking capacity would be expanded to approximately 2,000 by 2025.

At Route 28 Station, only the realignment of the DIAAH would be included as part of the proposed LPA. In the Draft EIS, the proposed limits of disturbance for the Metrorail alignment included the Dulles Toll Road, because portions of the Dulles Toll Road would need to be realigned upon future construction of the third lane on the DIAAH. The future effects of this widening are no longer assumed to be a direct effect of the Dulles Corridor Rapid Transit Project.

At Dulles Airport, the proposed LPA would transition underground in the median of the DIAAH west of the Route 28 overpass. The underground alignment would turn south toward the terminal, then turn west to access an underground station located immediately in front of the terminal. The alignment would extend under the parking lot north of the terminal building, then turn north and rise to the surface, approximately 350 feet north of where the Metrorail Alternative (T6/Y15) was proposed to surface. This shift of the portal at the western end of the Dulles Airport tunnel avoids an impact to the Dulles Marriott identified in the Draft EIS.

The proposed LPA would then transition to an aerial structure between Navigation Road and Rudder Road. The elevated tracks would follow Autopilot Drive, heading toward the northwest corner of Dulles Airport property and the Dulles Greenway in the vicinity of Route 606.

The underground station at the airport terminal will be designed to not preclude a station for a planned airport landside people-mover. The people-mover is planned by MWAA as a separate project after construction of the Dulles Corridor Rapid Transit Project. The Metrorail station would be located under the existing surface parking lot, adjacent to the future people-mover station. Access to the Metrorail station mezzanine would be

provided via pedestrian tunnels extending from the center of the existing terminal. These tunnels were recently constructed by MWAA to provide pedestrian access to the parking garage in front of the airport terminal.

In Loudoun County, the proposed LPA would extend along the Dulles Greenway to a point near the Route 772 interchange. The Loudoun County Metrorail stations would require realigning portions of the Dulles Greenway to accommodate transit stations in the median. From the Dulles Airport area, the alignment would transition to grade in the median of the Greenway just east of the Route 606 overpass. The at-grade tracks would extend westward, crossing Broad Run on an elevated structure parallel to the existing Dulles Greenway bridge. The tracks would continue westward to the west side of the Route 772 overpass. A tail track would extend beyond Route 772, which would be available for storage and maneuvering of vehicles outbound of the Route 772 Station.

Stations along the Dulles Greenway would be located in the median, with pedestrian bridges connecting to station facilities. The Route 606 Station would be located just west of the Route 606 overpass and the Dulles North Transit Center. The at-grade station would connect to new station facilities on the north side of the Greenway, including bus bays, Kiss & Ride spaces, and a park-and-ride garage. Only the Stage 1 parking structure proposed in the Draft EIS would be constructed, decreasing the total parking at this station from 4,750 to 2,750 spaces (including the existing 750 spaces at Dulles North Transit Center). Access to the Stage 2 parking structure would be preserved to allow for future expansion, if warranted. In addition, the proposed LPA would include a crosswalk at this station, with coordinated connections to adjacent developments. The Route 772 Station would be located one-half mile east of the Route 772 overpass. In the Draft EIS, two options were evaluated for the station facilities at the station. Both options would be included as part of the LPA; therefore, the LPA would have station facilities on both the north and south sides of the Dulles Greenway. These facilities would include bus facilities, Kiss & Ride spaces, and park-and-ride structures. The layout evaluated in the Draft EIS for the bus and Kiss & Ride facilities would be reconfigured, and parking structures would be added on both sides of the Dulles Greenway. Combined, the north and south parking structures would have 3,300 spaces. New roads, to be built by the site's developer, would provide access to the station.

#### 2.3.2.2 Proposed LPA Metrorail Yard Facilities

Improvements at the West Falls Church S&I Yard would be the same as those discussed for proposed LPA Phase 1. In addition, a new S&I Yard (Site 15) would be built on Dulles Airport property under the LPA. S&I Yard Site 15 is located south of Route 606, west of Horsepen Lake, north of future runway 1L/19R. Approximately half of the site is in the runway approach surface. To be consistent with MWAA policies regarding construction in the runway approach surface, occupied buildings on S&I Yard Site 15 would be located outside the approach surface. Detailed limits of disturbance mapping showing the location of S&I Yard Site 15 and the surrounding land uses is provided in the appendix.

S&I Yard Site 15, which would occupy roughly 70 to 90 acres, would be used for storage, maintenance, inspections, and repairs of Metrorail vehicles. It would have several buildings, including an operations and field base building, a service and inspection shop, and a car wash. The yard would also include a traction power substation, a tie-breaker station, stormwater management facilities, and storage areas for materials. Metrorail vehicles would access the proposed yard sites via lead tracks from the mainline.

The S&I Yard would initially be constructed to store, inspect, and service 184 rail vehicles. The design would allow for future expansion to accommodate potential growth of the Dulles line. In order to acquire and use lands from the Dulles International Airport, DRPT and WMATA will coordinate with the U.S. Department of

Transportation (USDOT), the Federal Aviation Administration (FAA), and MWAA to ensure that the acquisition process is consistent with FAA's *Policy and Procedures Concerning the Use of Airport Revenue.*

#### 2.3.2.3 Proposed LPA Metrorail Ancillary Facilities

The proposed LPA would include 21 traction power substations, 7 tie-breaker stations, and 24 stormwater management ponds. The locations of these facilities are shown in Figures 2.3-2 and 2.3-3. Detailed limits of disturbance mapping showing the locations of the traction power substations, tie-breaker stations, stormwater management ponds, and the land uses surrounding each are provided in the appendix.

#### 2.3.2.4 Proposed LPA Metrorail Operations

Metrorail operations under the proposed LPA may differ from that discussed for the proposed LPA Phase 1 since eight-car trains may have to be used for the Dulles Corridor service in lieu of a mix of six-car and eight-car trains in order to accommodate projected growth in ridership during the period. The terminal station moves from Wiehle Avenue to Route 772 in Loudoun County.

#### 2.3.2.5 Proposed LPA Costs

This section presents the capital costs and operations and maintenance costs associated with the proposed LPA.

##### Capital Costs

The capital costs for the proposed LPA would be similar to those presented for the Metrorail Alternative (T6/Y15) in the Draft EIS, though there would be additional costs due to escalation associated with the later opening year. The total capital costs (excluding financing) of the proposed LPA are estimated to be $3.4 billion (YOE dollars). Additional information regarding the capital costs for the proposed LPA is provided in Chapter 8.

##### Operations and Maintenance Costs

As described in Chapter 6, the operating plan for the proposed LPA would be similar to the Metrorail Alternative (T6/Y15), though there would be additional costs due to escalation associated with the later opening year. Therefore, the incremental Metrorail operating costs, of $123.6 million (YOE dollars) for the opening year of the proposed LPA would also be similar to the Metrorail Alternative (Y15/T6). Additional information regarding the operations and maintenance costs for the proposed LPA is provided in Chapter 8.

# 3 SOCIAL EFFECTS

This chapter presents the potential long-term and construction effects and appropriate mitigation of the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1 and No Build Alternative on the study area's population, land use, neighborhoods, cultural resources, visual resources and aesthetics, displacement and acquisition of property, community cohesion, and community services and facilities.

## 3.1 LAND USE

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative upon land use, population and employment in the Dulles Corridor. This includes effects of the proposed LPA and LPA Phase 1 upon the compatibility with existing land uses, planned developments, zoning, and comprehensive plans. Additional information on the population and employment effects are described in Chapter 5. The study area and methodology used in this analysis are documented in Section 3.1.1 of the Draft EIS. Land use planning, zoning and permitting decisions are within the jurisdiction of Fairfax County, the Town of Herndon, and Loudoun County.

Since the publication of the Draft EIS, both Fairfax and Loudoun counties have continued to implement policies and take action to support rail transit in the Dulles Corridor. In June 2003, the Fairfax County Board of Supervisors approved 4.1 million square feet of transit-oriented development located adjacent to the proposed Tysons Central 123 Station. This site, when developed, will include eight high-rise office and residential towers, which may be up to 25 stories tall. Estimates of the impacts of the Metrorail Alternative (T6/Y15) have been revised to account for this change in existing conditions from those described in the Draft EIS, as well as in the analysis of the proposed LPA and LPA Phase 1.

Loudoun County recently adopted revisions to its zoning code and map that will allow increased densities and a mix of compatible uses in the area proposed for the Route 772 Station. In December 2002, the Loudoun County Board of Supervisors approved the Moorefield Station project, located adjacent to the Route 772 Station on the southwest side of the Dulles Greenway. Moorefield Station will include 9 million square feet of commercial development and 6,000 dwelling units on 600 acres. Loudoun Station, another major development project located on the northeast side of the Dulles Greenway adjacent to the Route 772 Station, is currently under review by the County but has not yet been approved. The effects of these recent developments on station area development projections are detailed in Chapter 5 of this document.

### 3.1.1 LONG-TERM EFFECTS

Changes to the long-term (2025) effects to land use that would result from the design refinements to the proposed LPA and LPA Phase 1 are presented below. Secondary development effects, such as increased densities and changes in the land use projected to occur in conjunction with these alternatives, are presented in Chapters 5 and 9. Because the proposed LPA would be constructed primarily within existing transportation

rights-of-way, the effects upon current and future land uses would be primarily limited to those attributed to station touchdown points, station facilities, park-and-ride facilities, bus bays and parking.

A summary of land use effects associated with design modifications of the proposed LPA are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) in Table 3.1-1.

**Table 3.1-1: Summary of Land Use Effects**

| Land Use Elements | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA[2] | LPA Phase 1 2025[2] | LPA Phase 1 Opening Year[2] |
| Compatible with Existing Land Use | Yes | Yes | No change | Yes | Yes | Yes |
| Compatible with Zoning | Yes | Yes, although special exceptions would be required at some station areas | No change | Yes, although special exceptions would be required at some station areas | Yes, although special exceptions would be required at some station areas | Yes, although special exceptions would be required at some station areas |
| Compatible with Planned Development | No | Yes[1] | No change | Yes | Partially | Partially |
| Consistent with Comprehensive Plans | No. All plans assume high capacity transit improvements in the Dulles corridor. | Yes | No change | Yes | Yes, although all plans assume high capacity transit improvements for the Full LPA | Yes, although all plans assume high capacity transit improvements for the Full LPA |
| Increase in Station Area Population over No Build[3] | - | 37,421 | No change | 37,421 | 15,363 | 15,363 |
| Increase in Station Area Employment over No Build[3] | - | 65,625 | No change | 65,625 | 25,523 | 25,523 |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to updated information on planned and approved development proposals in the corridor.

[2] Population and employment potential calculated for areas within ½ mile radius of proposed stations except in Tysons Corner where a 1,600-foot radius was used. Changes were added to totals for all Traffic Analysis Zones in corridor.

[3] These effects are different from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) based on updated information on approved development proposals at Tysons Central 123, and refinements to the assumptions used to estimate retail space.

### 3.1.1.1 No Build Alternative

The effects associated with the No Build Alternative would be similar to those described in the Draft EIS. The No Build Alternative would be compatible with existing land use and zoning, but would not be consistent with comprehensive plans for the region or the corridor. The No Build would also not be consistent with planned

developments in the corridor, many of which have been designed to accommodate higher density in build-out years that would be allowed should high capacity transit be implemented in the corridor.

### 3.1.1.2 Proposed Locally Preferred Alternative

The long-term effects to land use for the proposed LPA and LPA Phase 1 are described below.

#### A. Proposed Full LPA

The effects associated with the proposed LPA would be similar to those described for the Metrorail Alternative (T6/Y15) in the Draft EIS. The proposed LPA would be compatible with existing land uses, planned development, and comprehensive plans.

The proposed LPA would be compatible with existing zoning in all of the station areas. All of the proposed station facilities that are not within existing transportation rights-of-way are located in areas zoned Commercial, Industrial, high density Residential (R-20), Planned Development Commercial (PDC), or Planned Residential Community (PRC). Transportation facilities are considered a permitted use in areas zoned PRC. In areas zoned as PDC, transportation facilities are permitted as a secondary use. In areas zoned Commercial, Industrial, or high-density Residential (R-20), transportation facilities are allowed with a special exception.

#### B. Proposed LPA Phase 1

The effects associated with the proposed LPA Phase 1 would be similar to the proposed LPA for areas east of the Wiehle Avenue station area. For areas located west of the Wiehle Avenue Station area, effects of the proposed LPA Phase 1, including the premium bus service, upon current land uses, planned development and zoning would be similar to those described for the No Build Alternative in the Draft EIS.

If the proposed LPA were not implemented in its entirety by 2025, the following land use effects would differ from those of the proposed LPA:

- The proposed LPA Phase 1 would be consistent with the *Fairfax County Comprehensive Plan* in Tysons Corner and areas east of Wiehle Avenue.
- In areas west of Wiehle Avenue, the proposed LPA Phase 1 would be consistent with the *Fairfax County Comprehensive Plan* and the Area Plans developed for the *Reston-Herndon Suburban Center* and the *Dulles Suburban Center* although it would not provide rapid transit to the western part of the Dulles Corridor.
- The proposed LPA Phase 1 would not be consistent with the *Loudoun County Revised Comprehensive Plan* because it would not provide rapid transit service to the Route 606 and Route 772 station areas.

### 3.1.2 CONSTRUCTION EFFECTS

Construction effects upon existing land uses would be similar to those described in Section 3.1.4 of the Draft EIS. There could be temporary uses of land along the corridor associated with construction staging areas, but this effect would be minimal. Temporary uses of land could also be required for the construction of the proposed LPA through Tysons Corner and Dulles Airport.

Construction associated with the proposed LPA would not result in impacts to levels of population or create a need for housing. Construction would generate short-term employment opportunities. The number of person-years of jobs that could be created by construction of the proposed LPA is described in Chapter 5.

Additional effects for the proposed LPA would be associated with the use of parcels at Wiehle Avenue beyond the county-owned facilities for construction of a park-and-ride garage. Use of these parcels for parking would be compatible with the existing and planned land use. Since the facilities would support the implementation of high-capacity transit in the Dulles corridor, they are consistent with comprehensive plans.

For the proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction effects on existing land uses would be limited.

### 3.1.3 MITIGATION

Mitigation measures would be similar to those described in Section 3.1.5 of the Draft EIS. Proposed mitigation for long term effects would include: design features at transit station areas that would be compatible with existing and planned land uses; replacement parking; and comprehensive landscaping and buffering throughout the corridor. Available mitigation strategies during construction include: truck access and circulation planning, lighting control plans, and best management practices.

## 3.2 NEIGHBORHOOD, COMMUNITY SERVICES, AND COMMUNITY COHESION IMPACTS

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on project area neighborhoods and community facilities. The study area, analysis methodology, and existing neighborhood characteristics are presented in Section 3.2 of the Draft EIS.

The locations of all study area neighborhoods and community facilities are illustrated on Figures 3.2-1a through 3.2-1f. The figures have been updated to include neighborhoods and community facilities that were added or expanded. In addition, some of the ancillary facilities (tie-breakers, substations, stormwater management ponds) have been relocated based on public comment and more detailed design. Potential impacts from these facilities on neighborhoods are also discussed in this section.

The study area for the neighborhood analysis was expanded to accommodate improvements to the West Falls Church Service and Inspection (S&I) Yard. The Idylwood neighborhood boundary was expanded as a result of this change. Based on public comment and further review, several additional neighborhoods and community facilities were analyzed to determine potential impacts. Neighborhoods that were added include:

- Brilyn Park;
- Locust Ridge and Street;
- Speer;

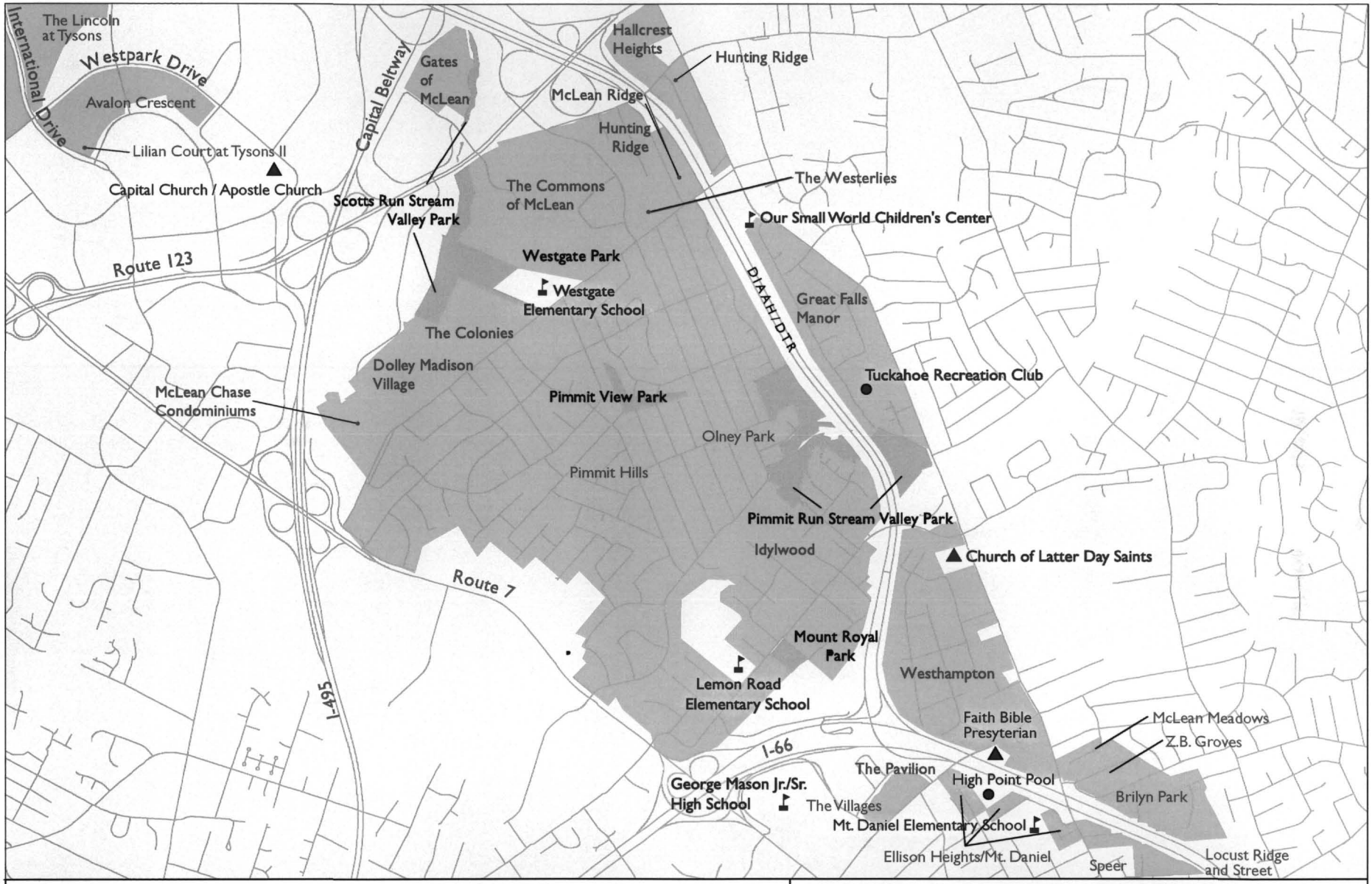



Figure 3.2-1a

# Study Area Neighborhoods and Community Facilities

Dulles Corridor Rapid Transit Project

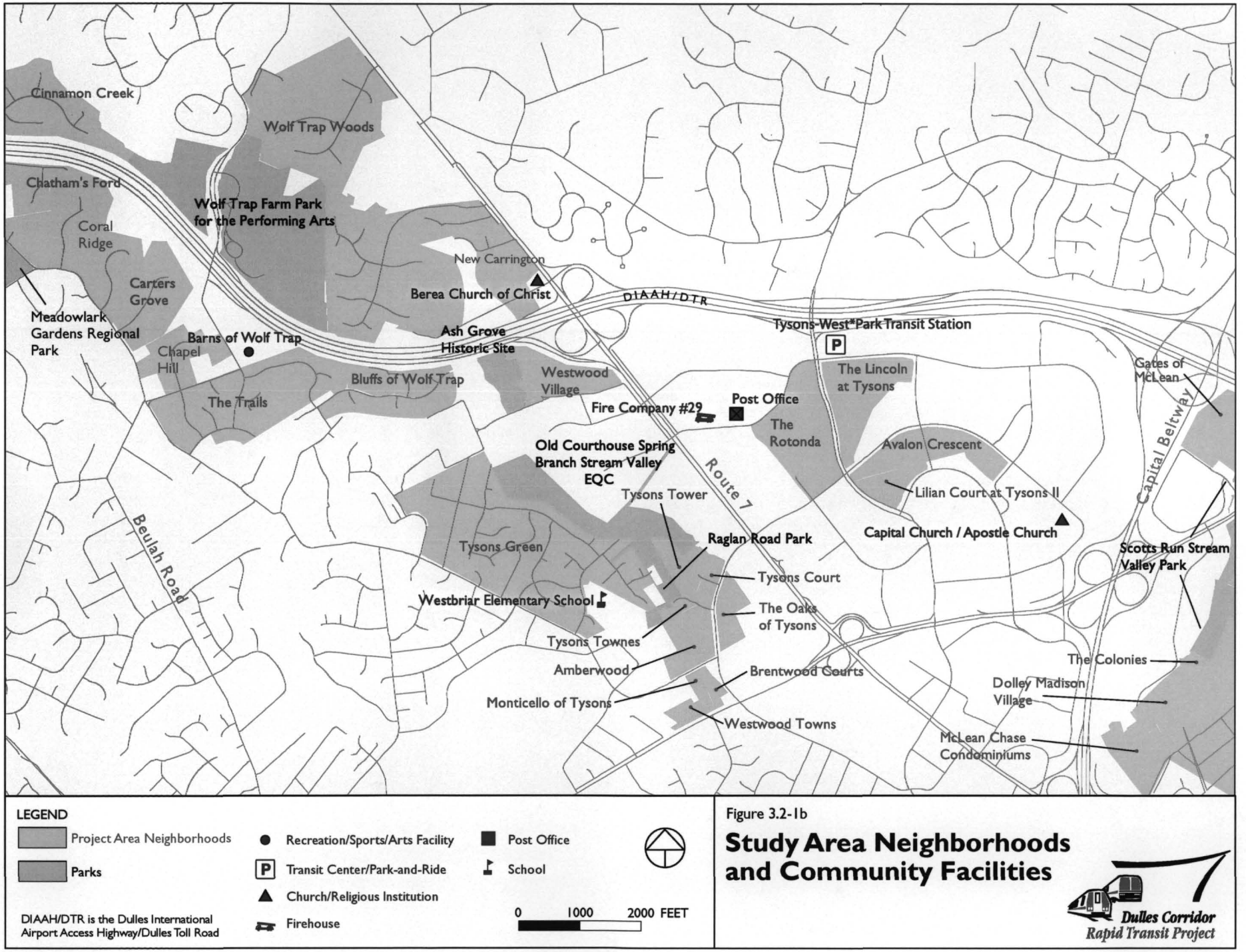



Figure 3.2-1b

## Study Area Neighborhoods and Community Facilities

Dulles Corridor Rapid Transit Project

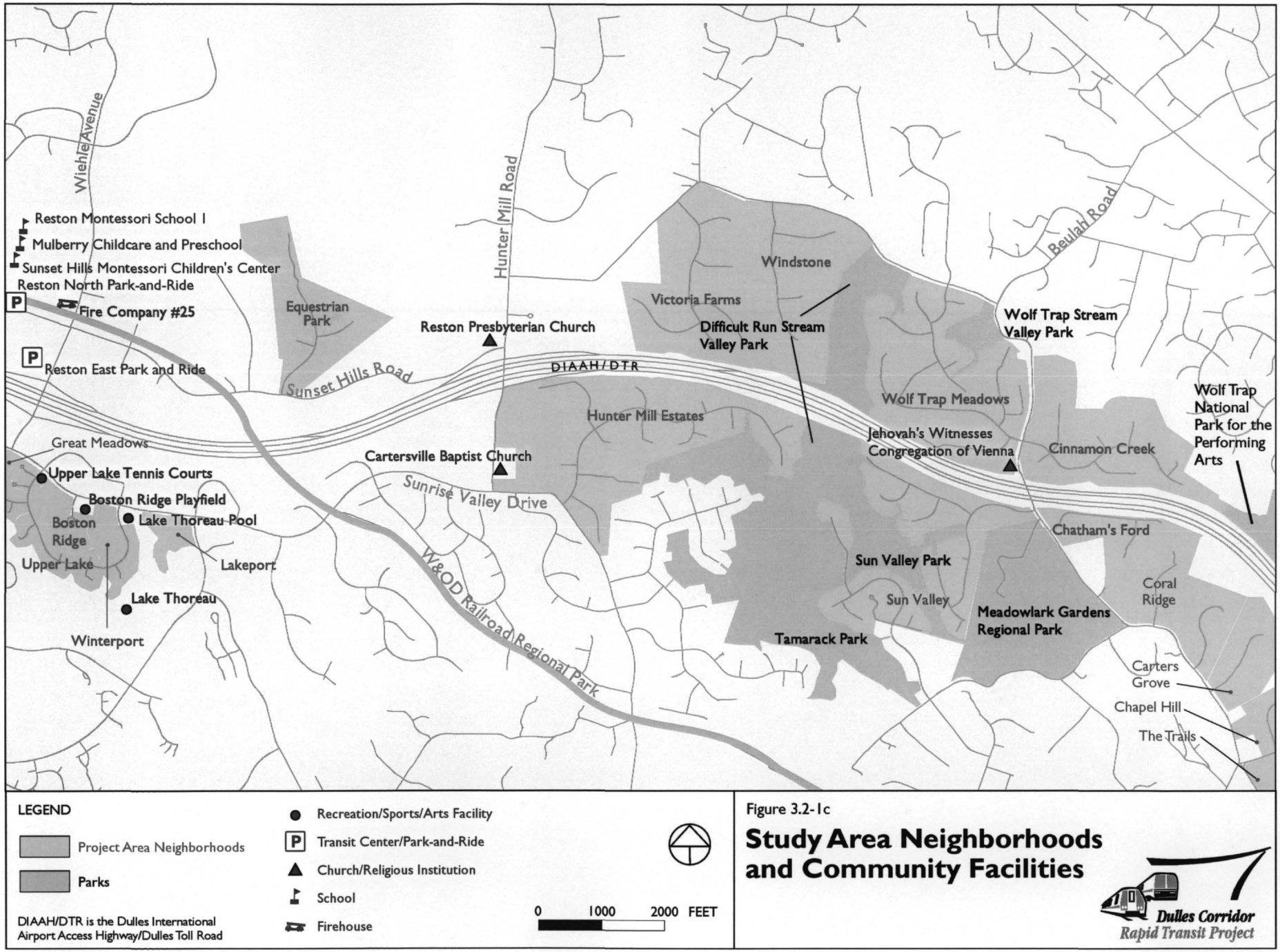



Figure 3.2-1c

## Study Area Neighborhoods and Community Facilities

Dulles Corridor Rapid Transit Project

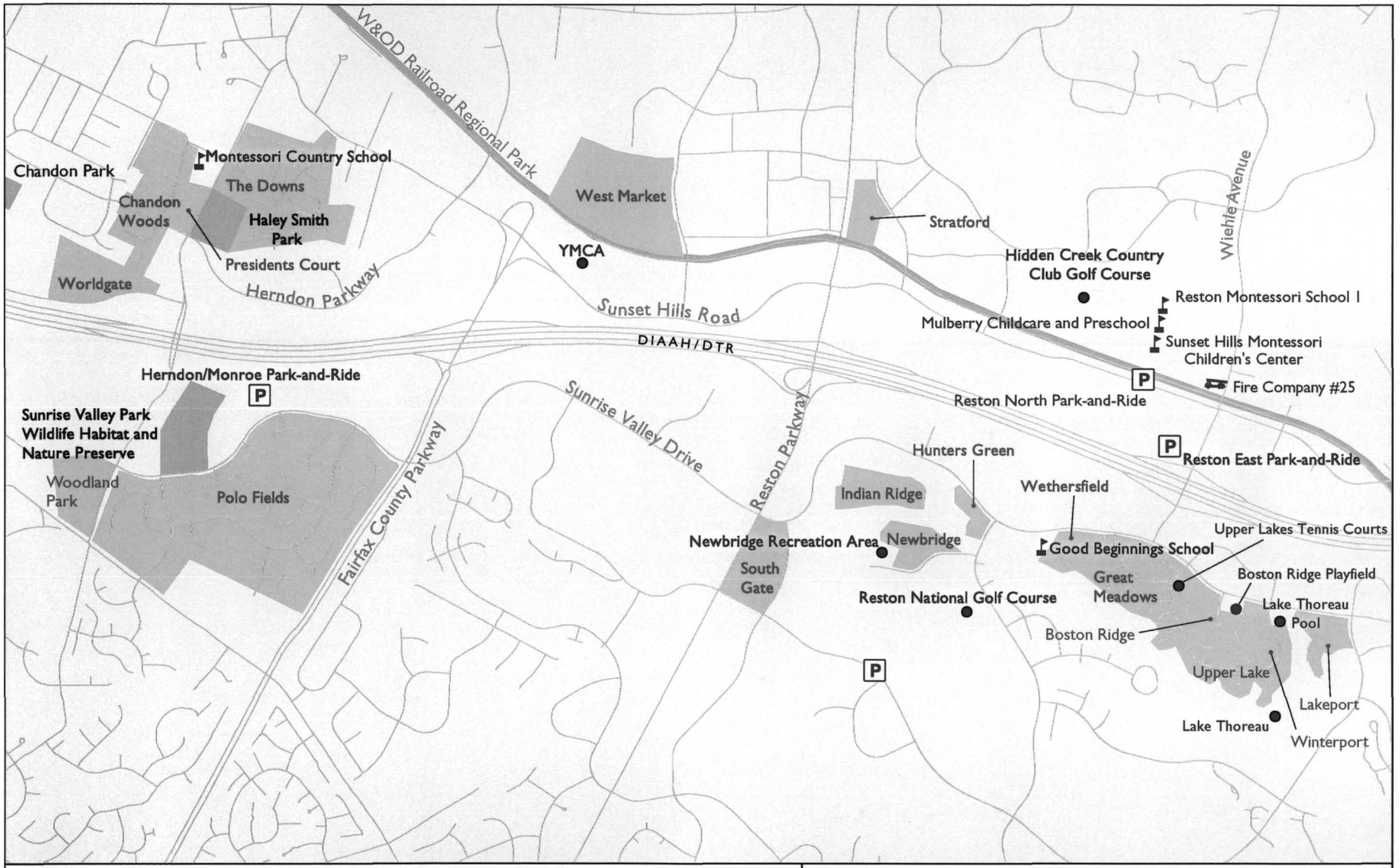



Figure 3.2-1d

# Study Area Neighborhoods and Community Facilities

Dulles Corridor Rapid Transit Project

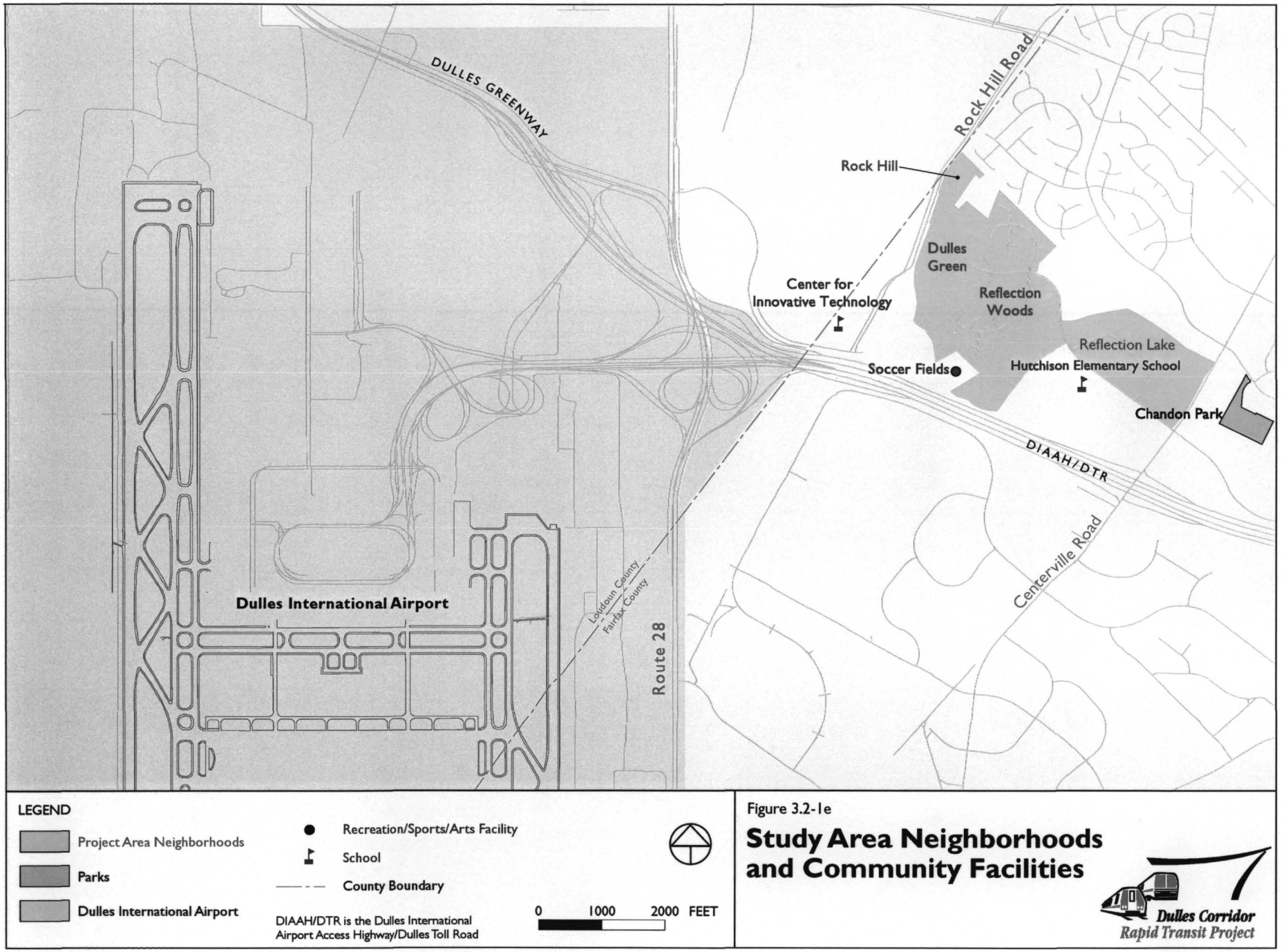



Figure 3.2-1e

# Study Area Neighborhoods and Community Facilities

Dulles Corridor Rapid Transit Project

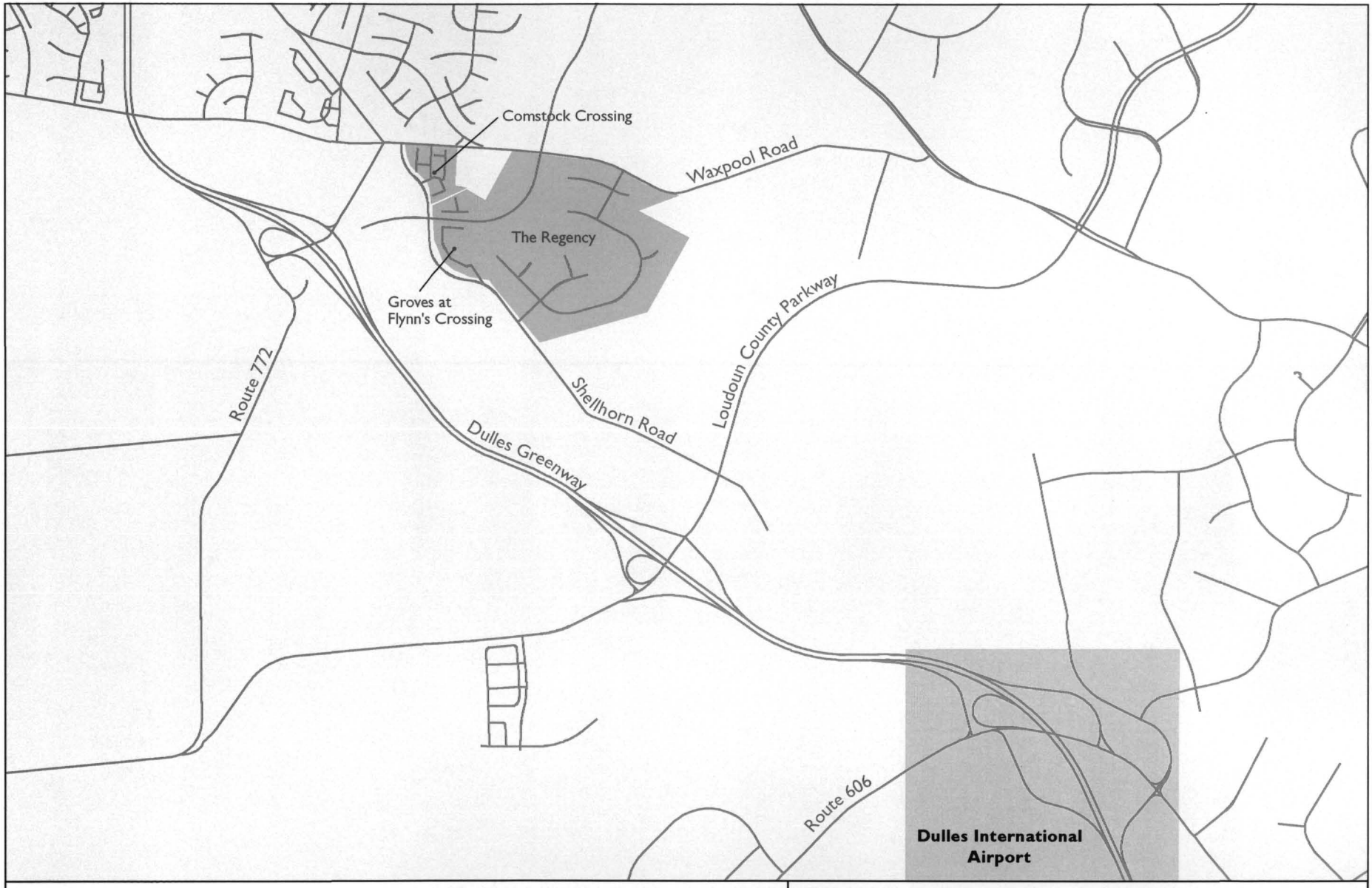



Figure 3.2-1f

## Study Area Neighborhoods and Community Facilities

Dulles Corridor
Rapid Transit Project

- Z.B. Groves;
- McLean Meadows;Ellison Heights /Mt. Daniel;
- The Villages;
- New Carrington;
- Chapel Hill;
- Coral Ridge;
- Hunter Mill Estates; and
- Woodland Park.

Community facilities that were added include:

- Mt. Daniel Elementary School;
- High Point Pool; and
- Faith Bible Presbyterian Church.

### 3.2.1 LONG-TERM EFFECTS

This section discusses the change in long-term effects to neighborhoods, community services, and on community cohesion that would result from refinements to the proposed LPA and LPA Phase 1. A summary of impacts to neighborhoods and community facilities associated with the No Build Alternative, the Metrorail Alternative (T6/Y15) and the proposed LPA are shown in Table 3.2-1.

The effects of the Metrorail Alternative (T6/Y15) have been revised to reflect further review and public comments. As described above, the list of study area neighborhoods and community facilities has been expanded to include additional neighborhoods within the vicinity of the Orange Line Connection to the East Falls Church station. There are no additional neighborhood impacts associated with the Metrorail Alternative (T6/Y15) from those identified in the Draft EIS by taking account of the expanded list of study area neighborhoods or the expansion of the Idylwood neighborhood boundary.

As described in Section 3.3, under the Metrorail Alternative (T6/Y15) maintenance access roads would be constructed from Plainfield Street to a new tiebreaker station located on the south side of the Dulles Connector Road, and from Baldwin Drive to a new tie-breaker station on the north side of the Dulles Connector Road. The access roads would be located between residences within the Idylwood and Great Falls Manor neighborhoods and represent additional residential partial acquisitions within these neighborhoods. There would be no residential displacements as a result of these access roads. Because the access roads would be utilized an average of once per week, there would be no traffic impacts associated with these access roads.

**Table 3.2-1: Summary of Long-Term Effects to Neighborhoods and Community Facilities**

| Neighborhoods and Community Facilities | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Changes in Population and Employment | Continuation of current conditions | Potential Increase at 11 Stations | No change | Potential Increase at 11 Stations | Potential Increase at 5 Stations | Potential Increase at 5 Stations |
| Social Values – Social Groups Benefited or Harmed | No enhanced mobility benefit provided to communities | Mobility benefit to communities near 11 stations through increased access to Metrorail service | No change | Mobility benefit to communities near 11 stations through increased access to Metrorail service | Mobility benefit to communities near 5 stations through increased access to Metrorail service; Neighborhoods within ½ mile of the Herndon/Monroe Park-and-Ride receive access to transit area via proposed Premium Bus Service, an enhancement to currently provided bus service | Mobility benefit to communities near 5 stations through increased access to Metrorail service; Neighborhoods within ½ mile of the Herndon/Monroe Park-and-Ride receive access to transit area via proposed Premium Bus Service, an enhancement to currently provided bus service |
| Physical Intrusions (Dust, Odor, Light) | None | Long Term effects - 2 Neighborhoods<br>Construction effects – 3 neighborhoods | No change | Long Term effects - 2 Neighborhoods<br>Construction effects – 3 neighborhoods | Long Term effects - 2 Neighborhoods<br>Construction effects – 3 neighborhoods | Long Term effects - 2 Neighborhoods<br>Construction effects – 3 neighborhoods |
| Access Changes – Bicycle, Pedestrian, Transit, and Vehicular | Continuation of current conditions. | Mobility benefit[1]<br>Increase in traffic volumes at stations, congestion affects two neighborhoods in Tysons West Station area and neighborhoods on Sunrise Valley Drive in Reston<br>Potential parking spillover at Tysons East, Tysons Center 123, Tysons Central 7, Tysons West, Wiehle Avenue and Herndon-Monroe | No change | Mobility benefit<br>Increase in traffic volumes at stations, congestion affects two neighborhoods in Tysons West Station area and neighborhoods on Sunrise Valley Drive in Reston<br>Potential parking spillover at Tysons East, Tysons Center 123, Tysons Central 7, Tysons West, Wiehle Avenue, and Herndon-Monroe | Mobility benefit to neighborhoods east of the Wiehle Avenue station area (Premium bus service would provide a mobility benefit to neighborhoods west of Wiehle)<br>Increase in traffic volumes at stations, congestion affects two neighborhoods in Tysons West Station area and neighborhoods on Sunrise Valley Drive in Reston<br>Potential parking spillover at Tysons East Tysons Center 123, Tysons Central 7, Tysons West, and Wiehle Avenue | Mobility benefit to neighborhoods east of the Wiehle Avenue station area (Premium bus service would provide a mobility benefit to neighborhoods west of Wiehle)<br>Increase in traffic volumes at stations, congestion affects two neighborhoods in Tysons West Station area and neighborhoods on Sunrise Valley Drive in Reston<br>Potential parking spillover at Tysons East Tysons Center 123, Tysons Central 7, Tysons West, and Wiehle Avenue |
| Noise and Vibration | None | 12 Neighborhoods | No change | 12 Neighborhoods | 12 Neighborhoods | 12 Neighborhoods |
| Community Cohesion | No Effect | No Effect | No change | No Effect | No Effect | No Effect |

| Neighborhoods and Community Facilities | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Isolation Effects | No Effect | No Effect | No change | No Effect | No Effect | No Effect |
| Community Facility Impacts | None | Traffic congestion at Fire Company #25 on Wiehle Avenue and park-and-ride facilities<br>Soccer field at Route 28 converted due to private developer proffer | No change | Traffic congestion at Fire Company #25 on Wiehle Avenue and park-and-ride facilities<br>Soccer field at Route 28 converted due to private developer proffer | Traffic congestion at Fire Company #25 on Wiehle Avenue and park-and-ride facilities | Traffic congestion at Fire Company #25 on Wiehle Avenue and park-and-ride facilities |
| Residential Acquisitions | None | 12 partial [2] | No change | 12 partial | 12 partial | 12 partial |
| Residential Displacements | None | None | No change | None | None | None |
| Safety – Pedestrian and Bicyclists, Crime, and Emergency Response | None | Increase in vehicular traffic volumes on local roads adjacent to 10 stations | No change | Increase in vehicular traffic volumes on local roads adjacent to 10 stations | Increase in vehicular traffic volumes on local roads adjacent to 5 stations | Increase in vehicular traffic volumes on local roads adjacent to 5 stations |
| Property Values | No effect | Increase at 10 station areas | No change | Increase at 10 station areas | Increase at 5 station areas | Increase at 5 station areas |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) based on a refined evaluation of the potential parking spillover effects.

[2] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to the identification of access roads to proposed tie-breakers. These impacts would be attributable to the Metrorail Alternative (T6/Y15), the proposed LPA, and proposed LPA Phase 1.

#### 3.2.1.1 No Build Alternative

The No Build Alternative would not promote enhanced mobility benefits to the neighborhoods within the corridor. This alternative would cause no changes in population or employment, community cohesion or isolation, no residential displacements, safety impacts, or changes in property values.

#### 3.2.1.2 Proposed Locally Preferred Alternative

The long-term community effects of the proposed LPA and LPA Phase 1 are described below

##### A. Proposed Full LPA

The effects associated with the proposed LPA would be similar to those for the Metrorail Alternative (T6/Y15).

##### B. Proposed LPA Phase 1

The effects associated with the proposed LPA Phase 1 would be similar to the proposed LPA as described above, in areas east of the Wiehle Avenue station area. As shown in Table 3-2.1, under the proposed LPA Phase 1 areas located west of Wiehle Avenue, where premium bus service would be used, would have impacts similar to the No Build Alternative. Because the proposed LPA Phase 1 is primarily located in an existing transportation right-of-way, no isolation effects or effects to community cohesion are projected.

If the proposed LPA were not constructed in its entirety by 2025, neighborhoods located west of the Wiehle Avenue station area would not receive mobility benefits from access to Metrorail service during the proposed LPA Phase 1. Neighborhoods within half-mile of the Herndon-Monroe Park-and-Ride would receive access to transit via the proposed premium bus service. Premium bus service is high quality bus service west of Wiehle Avenue meant to replicate rail service.

### 3.2.2 CONSTRUCTION EFFECTS

Construction effects on neighborhoods would be similar to those described in Section 3.2.4 of the Draft EIS. During construction of the proposed LPA, construction-related traffic, noise, air quality, and visual impacts would occur. These impacts are addressed in the individual sections for each of these topics. Generally, these short-term impacts would not affect most corridor neighborhoods because the neighborhoods are not located immediately adjacent to the proposed alignment or stations where major construction would occur, or they are already buffered from the transportation corridor. There would be no impacts to neighborhoods resulting from the construction of underground sections in Tysons Corner or at Dulles Airport.

Neighborhoods that would be affected by construction of the proposed LPA include the Idylwood neighborhood, which would experience noise effects and some additional truck traffic during construction at the West Falls Church Service and Inspection (S&I) Yard. Three neighborhoods—Hunting Ridge, McLean Ridge, and Westwood Village—would experience physical intrusions, primarily visual effects, during construction in the Tysons Corner vicinity. The Reflection Woods and Dulles Greens neighborhoods would be affected during construction because construction cranes will be visible during the construction of the Route 28 Station.

For the proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would not affect neighborhoods.

### 3.2.3 MITIGATION

Available mitigation measures focused on reducing noise, visual, and construction effects would be similar to those described in Section 3.2.5 of the Draft EIS. These strategies include: truck access and circulation planning; lighting control plans; design features at transit station areas to ensure compatibility with existing communities; and comprehensive landscaping and buffering throughout the corridor.

Additional proposed mitigation measures incorporated into the design of the proposed LPA and LPA Phase 1 subsequent to the publication of the Draft EIS include strategies to reduce noise impacts at the West Falls Church S&I Yard and mitigate traffic impacts at Wiehle Avenue. At the West Falls Church S&I Yard, a sound attenuation "cover box" would be constructed over the yard's existing loop track and a portion of the yard lead to mitigate noise impacts to neighborhoods adjacent to the yard. Proposed mitigation strategies for traffic impacts at Wiehle Avenue include adding turn lanes at intersections, parking management techniques, preferential treatment for rideshares, financial/time incentives, and information and marketing campaigns.

## 3.3 DISPLACEMENTS AND RELOCATIONS

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and the No Build Alternative on property displacements, relocations, or acquisitions (partial or full). A detailed explanation of the legal and regulatory context, analysis methodology, and existing conditions is provided in Section 3.3 of the Draft EIS.

To isolate the changes in impacts upon displacements and acquisitions for the proposed LPA, the changes in acquisitions and displacements due directly to refinements to the proposed LPA were identified and added to the impacts identified for the Metrorail Alternative (T6/Y15) in the Draft EIS. The effects of the Metrorail Alternative (T6/Y15) have also been updated to reflect the identification of access roads to ancillary facilities. In some cases, property lines have shifted as parcels have been subdivided or ownership has been transferred since the Draft EIS was published. The number of acquisitions and displacements will be further refined as engineering and design of the proposed LPA progresses.

### 3.3.1 LONG-TERM EFFECTS

The commercial and residential acquisitions and displacements associated with design refinements of the proposed LPA are summarized for the No Build Alternative, the Metrorail Alternative (T6/Y15) and the proposed LPA in Table 3.3-1. Acquisitions include both full and partial acquisitions. Displacements refer to each individual businesses or residences that would be displaced due to land acquisition.

The effects of the Metrorail Alternative (T6/Y15) have been revised based on further evaluation of the effects. As described in Section 3.2 of this document, the construction of two new access roads and a tie-breaker station would require partial acquisitions of residential land in the area located north of the West Falls Church Metrorail Station. Under the Metrorail Alternative (T6/Y15) both access roads would be paved and approximately 15 feet wide. One access road would be constructed from the end of Plainfield Street to a new tie-breaker station. There would be a partial acquisition of one parcel that is currently undeveloped but zoned for residential use. Two additional partial acquisitions would be required for an access road between two residential properties off of Baldwin Drive to a tie-breaker station in the right-of-way of the east side of the Dulles Connector Road. These acquisitions would not result in any displacements.

Due to a transfer in ownership, a Porsche/Audi automobile sales and service center that is scheduled to open for business in late 2003 would be displaced. This displacement was identified as a displacement of the previous business on the site, Templeton Dodge, for the Metrorail Alternative (T6/Y15) in the Draft EIS.

In order to acquire and use lands from the Dulles International Airport for use for S&I Yard Site 15, DRPT and WMATA will coordinate with the U.S. Department of Transportation (USDOT), the Federal Aviation Administration (FAA) and the Metropolitan Washington Airports Authority (MWAA) to ensure that the acquisition process is consistent with FAA's *Policy and Procedures Concerning the Use of Airport Revenue.*

**Table 3.3-1 Displacements and Acquisitions Impacts**

| | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| **Displacements and Relocations** | **No Build Alternative** | **Metrorail Alternative (T6/Y15)** | | **Full LPA** | **LPA Phase 1 (2025)** | **LPA Phase 1 Opening Year** |
| Residential Acquisitions | 0 | 12 | +4 | 16[1] | 15 | 15 |
| Residential Displacements | 0 | 0 | No change | 0 | 0 | 0 |
| Commercial Acquisitions | 0 | 64 | +11 | 75 | 45 | 45 |
| Commercial Displacements | 0 | 3 | +1/-2 | 2[1] | 2 | 2 |
| Total Acreage | 0 | 129.6 | +9.7 | 139.3 | 139.3 | 139.3 |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to the identification of access roads to proposed tie-breakers. These impacts would be attributable to the Metorrail Alternative (T6/Y15), the proposed LPA, and proposed LPA Phase 1.

#### 3.3.1.1 No Build Alternative

The No Build Alternative would result in no residential or commercial displacements or acquisitions.

#### 3.3.1.2 Proposed Locally Preferred Alternative

The long-term effects of the proposed LPA and LPA Phase 1 on displacements, relocations and acquisitions are described below.

#### A. Proposed Full LPA

The effects associated with the proposed LPA would be similar to those described in the Draft EIS with the following exceptions described below.

- At the Tysons East Station, a shift in the alignment to the north side of Route 123 has eliminated the need for two partial acquisitions of commercial property on the south side of Route 123, but increased the area of one partial acquisition of a commercial property on the north side of Route 123.
- At the Tysons West Station, the reduction of the station footprint and other design refinements have reduced the number of commercial acquisitions by four and would no longer cause the displacement of one business, Security Moving and Storage.
- Changes to the station configuration at the Wiehle Avenue Station would require a larger footprint than described in the Draft EIS. As a result, six more commercial parcels would be acquired, and one additional business, Reston Self-Storage would be displaced.
- One partial acquisition of commercial property would be required for a traction power substation and a tie-breaker station located west of the Route 606 Station.
- The station facilities at the Route 772 Station have been reconfigured, resulting in a net increase of five partial acquisitions. Partial acquisitions would be required on four parcels north of the Dulles Greenway for the station facilities and a tie-breaker station. An additional partial acquisition would

also be required on property south of the Dulles Greenway. This acquisition was measured as an acquisition impact for Option 2 under the Metrorail Alternative (T6/Y15) in the Draft EIS.

### B. Proposed LPA Phase 1

In the Wiehle Avenue station area and areas east of Wiehle Avenue, the acquisition and displacement effects associated with the proposed LPA Phase 1 would be similar to those of the proposed LPA. The proposed LPA Phase 1, which proposes premium bus service west of Wiehle Avenue, would result in 30 fewer commercial acquisitions than the proposed LPA. The construction of the park-and-ride facility at Route 606 Station is not expected to have acquisition or displacement impacts because it is located entirely on property owned by the Metropolitan Washington Airports Authority (MWAA). The displacement and relocation effects of the proposed LPA Phase 1 would be the same as those of the proposed LPA.

If the proposed LPA is not constructed in its entirety by 2025, the acquisition effects of the proposed LPA Phase 1 would be less than those of the proposed LPA, as areas located west of the Wiehle Avenue station area would have impacts similar to those of the No Build Alternative.

## 3.3.2 CONSTRUCTION EFFECTS

The short-term construction effects of the proposed LPA would be similar to those described in Section 3.3.5 of the Draft EIS for the Metrorail Alternative (T6/Y15). Contractor work areas would be required for temporary use during the construction period.

Most of the contractor work areas would be accommodated on land being acquired for station areas. In addition, several full or partial parcels would be temporarily acquired for additional contractor work areas, as illustrated in Figure 2.2-4. None of these contractor work areas would cause displacements of existing land uses or permanent acquisitions of land. Therefore, no short-term construction impacts related to displacements or relocations would occur.

The construction impacts of the proposed LPA Phase 1 are similar to those of the proposed LPA as described above, with one exception. A temporary acquisition for the contractor work area at Dulles Airport would not be required under the proposed LPA Phase 1.

## 3.3.3 MITIGATION

Available mitigation measures for the proposed LPA and LPA Phase 1 would be similar to those described in Section 3.3.6 of the Draft EIS for the Metrorail Alternative (T6/Y15). Upon completion of more detailed design for the project, a comprehensive relocation plan would be developed to ensure that the orderly relocation of all displaced businesses would be accomplished. The acquisition of right-of-way and the relocation of displaced businesses would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended. Relocation resources would be available to all residential, business, and nonprofit displacees without discrimination.

## 3.4 VISUAL AND AESTHETIC CONDITIONS

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative to visual resources. Changes in existing conditions since the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects, and available mitigation.

Existing conditions in the corridor are similar to those described in Section 3.4 of the Draft EIS, with the following exceptions. First, the Virginia Department of Transportation (VDOT) designated the Hunter Mill Road Historic District a Virginia Scenic Byway subsequent to the publication of the Draft EIS. Both the proposed LPA and LPA Phase 1 would require construction of a Metrorail bridge located between the Dulles International Airport Access Highway (DIAAH) and Dulles Toll Road bridges as they pass over Hunter Mill Road and cross the Hunter Mill Road Historic District. Second, in certain areas along the Dulles Corridor, construction has begun on developments described as planned or proposed in the Draft EIS. A site plan has also been approved for the Moorefield Station development adjacent to the proposed Route 772 Station site. Finally, a detailed viewshed analysis of the Washington Dulles International Airport (Dulles Airport) historic district was completed by the project in response to comments received since the publication of the Draft EIS. This analysis confirmed that the proposed LPA would not result in any substantial impacts to the visual character of the historic district or contributing elements such as the Main Terminal, tower, and the "peekaboo" view sequence experienced by motorists as they approach the airport from the DIAAH.

These changes are reflected in the table below. The analysis methodology and the legal and regulatory context are unchanged and are described in Section 3.4 of the Draft EIS.

### 3.4.1 LONG-TERM EFFECTS

Long-term visual effects of the proposed LPA would be similar to those noted in Section 3.4.3 of the Draft EIS, except as described below. A summary of visual impacts associated with design modifications of the proposed LPA are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) in Table 3.4-1.

**Table 3.4-1: Visual Effects**

| | Draft EIS | | Change in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | **No Build Alternative** | **Metrorail Alternative (T6/Y15)** | | **Full LPA** | **LPA Phase 1 2025** | **LPA Phase 1 Opening Year** |
| **Visual Impacts** | Continues current conditions. | Project is primarily located in an existing transportation corridor and would have minimal visual effects, except for those associated with aerial structure in Tysons Corner, bridge over W&OD Trail, and Dulles Airport historic district[1] | Additional analysis and design modifications eliminated substantial impacts to the amount of light under the proposed Metrorail bridges at the W&OD Railroad Regional Park | Project is primarily located in an existing transportation corridor and would have minimal visual effects | Project is primarily located in an existing transportation corridor and would have minimal visual effects | Project is primarily located in an existing transportation corridor and would have minimal visual effects |

[1]These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to the changes in existing conditions discussed above.

### 3.4.1.1 No Build Alternative

The No Build Alternative would continue current conditions and would not result in long-term visual impacts.

### 3.4.1.2 Proposed Locally Preferred Alternative

The long-term visual effects of the proposed LPA and LPA Phase 1 are described below.

#### A. Proposed Full LPA

As outlined in Table 3.4-1, the visual effects associated with the proposed LPA are similar to those described in the Draft EIS, with the following exceptions:

- The outbound and inbound profiles of the Orange Line Connection have been lowered from the proposed eastern terminus of the proposed LPA to Idylwood Road to reduce visual impacts to the Westhampton and Idylwood neighborhoods.
- At the West Falls Church S&I Yard, tree cover would be removed from the infield of the existing loop tracks to allow construction of additional storage tracks and a sound attenuation cover box would be added to the proposed yard facilities in response to comments regarding potential noise impacts from trains operating on the loop tracks. Tree cover would also be removed from a small area between the existing loop tracks and the Dulles Connector Road, where a new yard lead would be constructed. However, because homes in the Westhampton and Idylwood neighborhoods already have views of the existing West Falls Church S&I Yard, visual impacts associated with the removal of tree cover would be less than substantial. Trees along the northern edge of the yard bordering the Idylwood neighborhood would not be removed.
- The curved segment of the proposed LPA immediately west of the Route 123/Dulles Connector Road interchange has been redesigned to reduce visual impacts associated with aerial structures through Tysons Corner. By shifting a portion of the proposed alignment to the north side of Route 123, a lengthy oblique crossing of aerial structure over Route 123 using bents to span the roadway is eliminated.
- The substantial visual effect from the construction of a new Metrorail bridge over the Washington and Old Dominion (W&OD) Regional Railroad Park between the existing DIAAH and Dulles Toll Road bridges has been reduced. Although the new bridge would block some of the light that currently falls through the openings between the four existing bridges that carry east- and westbound lanes of the DIAAH and Dulles Toll Road over this trail, the shadow effect created by a new bridge would be minimized by designing the bridge according to the Northern Virginia Regional Park Authority's *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings* for minimum Elevation Open Area, height, and width.
- The construction of a new Metrorail bridge over the Hunter Mill Road Historic District between the existing DIAAH and Dulles Toll Road bridges would result in a less than substantial impact to the Hunter Mill Road Historic District. Views of the proposed Metrorail facilities as a motorist approaches the DIAAH and Dulles Toll Road from the south are limited due to Hunter Mill Road's uphill climb, and the DIAAH and Dulles Toll Road bridges would block the Metrorail bridge. Approaching from the north, Hunter Mill Road has a downhill grade, and Metrorail facilities would be visible between the DIAAH and Dulles Toll Road bridges. A wide drainage ditch located on a wooded island in the northwest quadrant of the Hunter Mill Road/Dulles Toll Road interchange between Sunset Hills

Road and a Dulles Toll Road ramp would be replaced with a stormwater pond. However, none of these physical changes would result in a substantial impact to the scenic nature of Hunter Mill Road.

- The north entrance pavilion of the Route 28 Station would result in a less than substantial visual impact on the Dulles Green development. One apartment building would be located within approximately 90 feet of the station's bus bays and within 280 feet of the elevated entrance pavilion. Views of the transit facility from the ground and second floor residences would be screened by landscaping provided by the developer, as well as by landscaping proposed as part of this project. Because the north entrance pavilion would be constructed on ground that is elevated above the ground floor level apartments, the third and fourth floor units are likely to have clear views of buses, Kiss & Ride facilities, lights, escalators, and the pavilion, as well as the track and trains in the median of the DIAAH and Dulles Toll Road. However, because these apartments are being constructed adjacent to an existing high-capacity transportation facility, the visual impact associated with the Dulles Corridor Rapid Transit Project would be less than substantial.
- The less than substantial visual impacts to the Dulles Airport historic district and contributing elements that were identified in the Draft EIS were further reduced by lowering the alignment profile to the lowest height necessary to clear the Horsepen Run floodplain.
- Parking facilities at the proposed Route 772 Station have been expanded and reconfigured since the publication of the Draft EIS to incorporate park-and-ride allocation changes and to take into account the approved site plan for the Moorefield Station development south of the Dulles Greenway and other proposed development in the vicinity of the station. Because the siting and design of parking facilities on both the north and south sides of the Dulles Greenway are being coordinated with developers from the outset, they would not result in any substantial visual impacts on residential units constructed as part these developments.

### B. Proposed LPA Phase 1

Visual effects associated with the proposed LPA Phase 1, which proposes premium bus service west of Wiehle Avenue, are similar to those described in the Draft EIS in Section 3.4.1.2 for the proposed LPA from Wiehle Avenue westward, with the following exceptions:

- In addition to the 750 parking spaces available at the Dulles North Transit Center, 830 parking spaces would be added at the Route 606 Station site to accommodate increased demand for premium bus service associated with the proposed LPA Phase 1. Because these spaces would be constructed within the Route 606 Station footprint proposed in the Draft EIS, this facility would not result in any impacts over and above those already identified.

If the proposed LPA were not constructed in its entirety by 2025, areas located west of the Wiehle Avenue Station area would have impacts similar to the No Build Alternative. The only exception would be for the park-and-ride facility at the Route 606 Station, which would be added during the proposed LPA Phase 1, as described above. Visual impacts from the addition of surface parking would be minimal.

## 3.4.2 CONSTRUCTION EFFECTS

The visual effects associated with construction of the proposed LPA would be similar to and include those described in Section 3.4.4 of the Draft EIS for the Metrorail Alternative (T6/Y15). Most construction

techniques have not been identified at this time, but it is assumed that standard best management practices would be used for construction.

The construction staging areas will be located along the corridor for construction of the proposed LPA. Views into construction staging areas could occur depending upon their location. Some views could be from highly sensitive viewers. Construction staging areas often contain construction equipment, stockpiles of materials, construction maintenance facilities, refueling stations, employee welfare facilities (including portable toilets), and parking for employee vehicles. This type of land use, though temporary, is generally not visually compatible with most surrounding development or undeveloped land, including the type of development that is most common throughout the Dulles Corridor-office, commercial, residential, recreational, and open space. In many cases, large numbers of viewers would be able to see the construction staging areas, either from high-volume roadways or from tall office and residential buildings. Thus, it is likely that at least some of the construction staging areas would result in substantial short-term visual impacts if not screened from view.

In Tysons Corner, construction of the elevated and underground segments of the proposed LPA would have additional visual effects. Elevated segments take longer to construct and would be more visible and harder to screen from view. Thus, these portions of the proposed LPA have a greater chance of resulting in substantial visual impacts in Tysons Corner. The density of development in Tysons Corner and the height of many of the buildings allows for large numbers of viewers to see the construction. Underground segments, on the other hand, require special construction techniques and special staging areas. Construction of underground segments creates the removal of spoils (wastes) that must be stockpiled or hauled away and could result in visual impacts. The accumulation of dirt outside the excavation resulting from haul trucks is particularly likely to result in visual impacts.

Underground operations would have construction activity visible only at the entrances and at stations. However, if used, cut-and-cover tunnel construction techniques, whereby a trench is dug, tunnel lining and support is constructed from aboveground, and then the tunnel is covered, would be visible from areas surrounding the entire tunnel, not just at the entrances and stations.

For the proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have limited visual effects.

### 3.4.3 MITIGATION

Neither the proposed LPA nor the proposed LPA Phase 1 would result in any substantial visual impacts to resources along the Dulles Corridor.

Proposed mitigation for remaining visual impacts to historic resources in the corridor would be decided in consultation with VDHR according to a Section 106 agreement in the process of being executed between VDHR, FTA, and DRPT, with WMATA, MWAA, and Fairfax and Loudoun counties as concurring parties. Mitigation options available to reduce visual impacts are similar to those discussed in Section 3.4.5 of the Draft EIS and Chapter 7 of the *Visual and Aesthetic Resources Technical Report* (June 2002). These include: light wells and additional lighting to reduce impacts to trail users at Pimmit Run Stream Valley Park, Difficult Run Stream Valley Park, and the W&OD Railroad Regional Park; coordination with property owners to re-establish landscaping with replacement trees or vines; and a landscaping plan to mitigate the removal of trees in

the median of the DIAAH and the Dulles Greenway that would employ irregularly spaced pockets of landscaping to provide visual relief along the corridor while preserving the intent of the original design of the DIAAH by Dan Kiley and Eero Saarinen, rather than a continuous band of vegetation. Available mitigation measures for construction impacts include: screening of construction areas; keeping construction sites and staging areas clean and organized; and returning staging areas to their previous use quickly. Mitigation strategies available to further minimize impacts to visual components associated with Dulles Airport could include the use of transparent security fencing within peekaboo sequence viewsheds where the alignment is above ground.

Options available for mitigating the remaining visual impacts to the W&OD Railroad Regional Park would be coordinated with Northern Virginia Regional Park Authority (NVRPA) to ensure that enough light remains for the safety and comfort of trail users and that the openness of the trail is not substantially diminished. Virginia Department of Rail and Public Transportation (DRPT) would adhere to the *Northern Virginia Regional Park Authority Guidelines for the Development of W&OD Trail Bridge Crossings* for minimum Elevation Open Area, height, and width when designing and constructing the Metrorail bridge over the W&OD Railroad Regional Park.

## 3.5 CULTURAL RESOURCES

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and the No Build Alternative on cultural resources. Changes in existing conditions since the publication of the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects, and available mitigation. For a detailed description of the analysis methodology, legal and regulatory context, and existing archaeological and architectural resources within the corridor, please see Section 3.5 of the Draft EIS. In addition, a *Cultural Resources Technical Report (Phase Ia)* was prepared and submitted to the Virginia Department of Historic Resources (VDHR) in August 2003. Figures 3.5-1a and 3.5-1b show the revised Areas of Potential Effects (APE) for both architecture and archaeology. Several additional resources that had not yet been identified by VDHR at the time the Draft EIS was published are evaluated in this Supplemental Draft EIS.

Two archaeological resources have been added for consideration (44FX2662 and 44FX2405), and one architectural resource has been added (Hunter Mill Road Historic District). These resources are discussed below and summarized in Table 3.5-1.

**Site 44FX2662 (Zipf).** This prehistoric and historic site, located in the Orange Line Connection portion of the corridor, was discovered during a pedestrian survey of recently cleared land in 1999. The site is within the APE but outside the predicted limits of disturbance. The prehistoric component is undated and the historic artifacts appear to date to the first half of the twentieth century. It was judged to have been completely destroyed by a new housing development, and no further work was recommended. The site is probably ineligible for listing in the National Register of Historic Places (NRHP).

**Site 44FX2405 (Scott's Run).** This prehistoric site of unknown date is located in the Tysons Corner portion of the corridor, within the APE but outside the predicted limits of disturbance. The site probably functioned as a lithic workshop for the processing of stone tools. It was identified in 1999 during a walkover survey by a member of the local Archeological Society of Virginia. Although some of the site probably has been destroyed, it is possible that portions have been buried with fill dirt from nearby construction since 1960. The site is probably ineligible for listing in the NRHP.

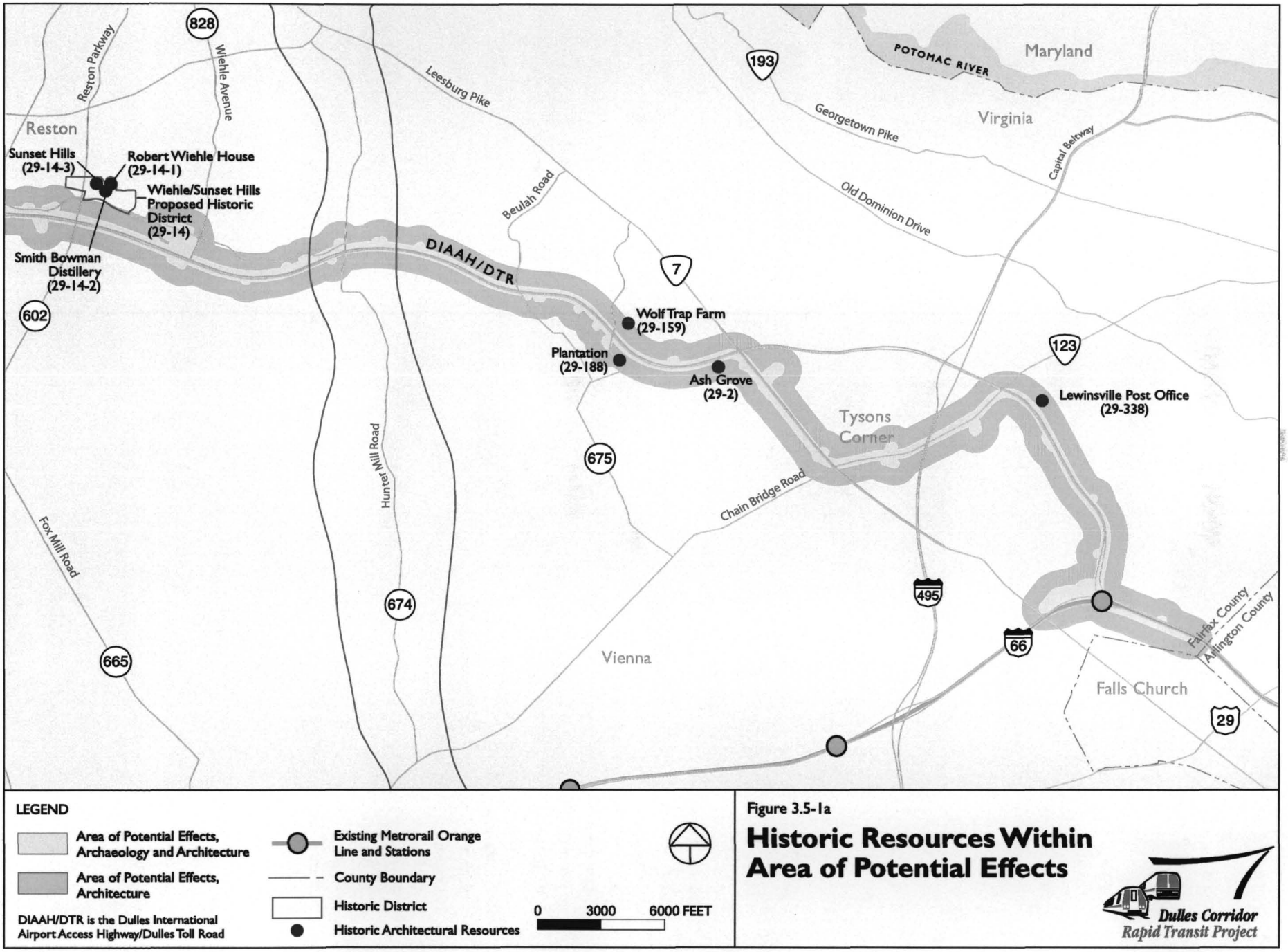



Figure 3.5-1a

# Historic Resources Within Area of Potential Effects

Dulles Corridor Rapid Transit Project

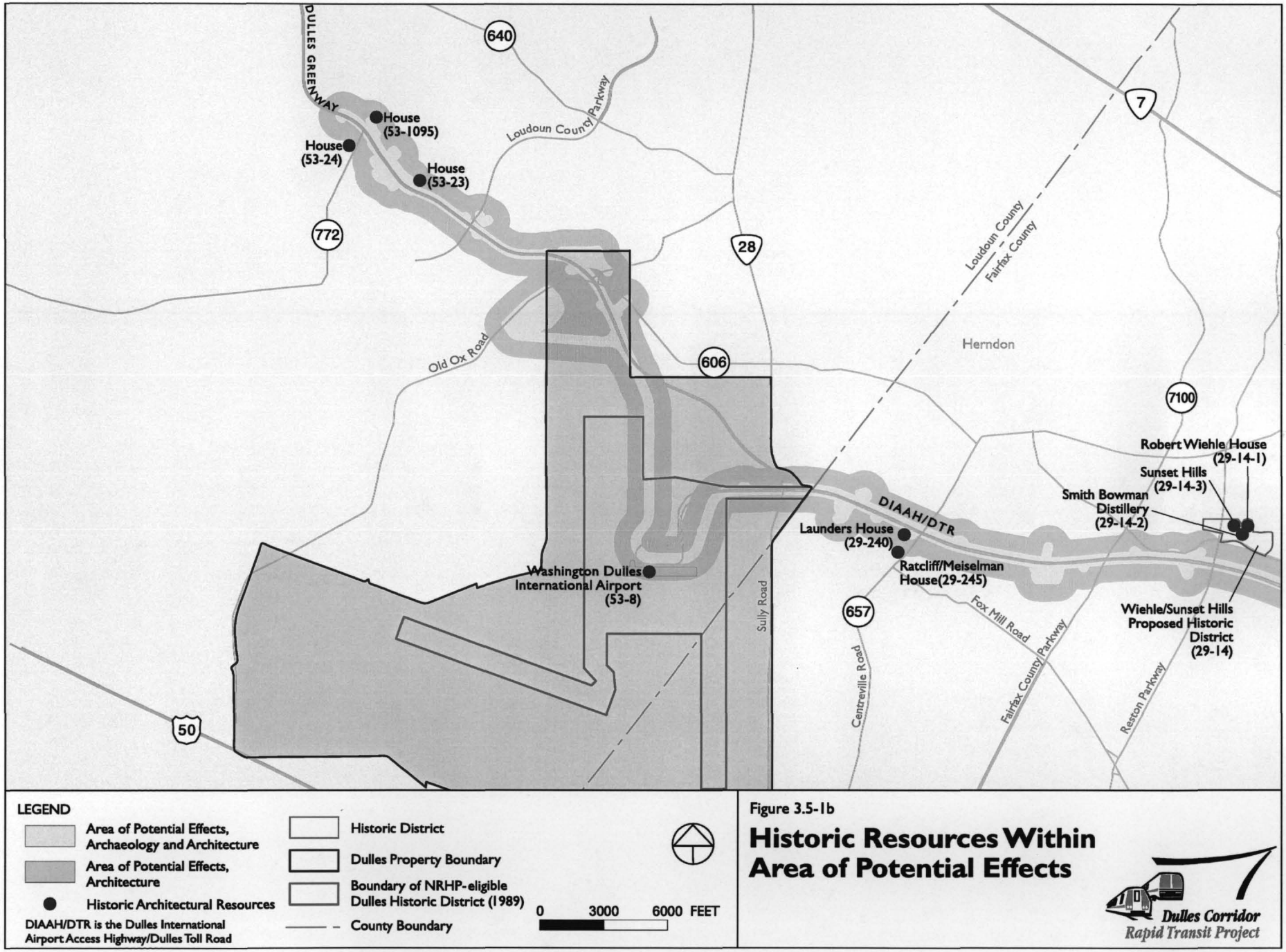



Figure 3.5-1b

# Historic Resources Within Area of Potential Effects

Dulles Corridor Rapid Transit Project

**Hunter Mill Road Historic District (029-5180), Reston.** Since the publication of the Draft EIS, VDOT has designated the Hunter Mill Road Historic District as a Scenic Byway. The district, which stretches along Hunter Mill Road from Baron Cameron Road (Route 606) to Chain Bridge Road (Route 123) in the mid-corridor portion of the study area, is representative of a key transportation resource that has served Northern Virginia for almost 200 years. Archaeological and architectural resources along Hunter Mill Road have been identified as contributing elements to the historic district. The Hunter Mill Road Historic District is significant for a number of contributions to the history of Northern Virginia, including evidence of Native American sites, the milling and farming industries in Fairfax County, association with numerous Civil War activities and people, the development of public education in Fairfax County, and the original location of Cartersville, a community established by emancipated African-American slaves. It has been deemed eligible for listing in the Virginia Landmarks Register and the NRHP.

**Table 3.5-1: Archaeological and Architectural Resources Not Evaluated in the Draft EIS**

| Resource | No Build Alternative | Metrorail Alternative (T6/ Y15) | Proposed Locally Preferred Alternative | |
|---|---|---|---|---|
| | | | Effects of LPA | LPA Phase I Effects |
| Archaeological Site 44FX2662 (Zipf) | Continues Current Conditions | Site 44FX2662 not yet identified by VDHR | Site 44FX2662 is located outside the predicted limits of disturbance and would not be affected by construction of the proposed LPA | Site 44FX2662 is located outside the predicted limits of disturbance and would not be affected by construction of the proposed LPA Phase I |
| Archaeological Site 44FX2405 (Scott's Run) | Continues Current Conditions | Site 44FX2405 not yet identified by VDHR | Site 44FX2405 is located outside the predicted limits of disturbance and would not be affected by construction of the proposed LPA | Site 44FX2405 is located outside the predicted limits of disturbance and would not be affected by construction of the proposed LPA Phase I |
| Hunter Mill Road Historic District | Continues Current Conditions | The Hunter Mill Road Historic District not yet designated as a Scenic Byway | Because the Hunter Mill Road Historic District is located within an existing transportation corridor, impacts to the district associated with this project would be minimal | Because the Hunter Mill Road Historic District is located within an existing transportation corridor, impacts to the district associated with this project would be minimal |

Although the anticipated effect on the **Washington Dulles International Airport (53-8)** has not changed since the publication of the Draft EIS, a detailed viewshed analysis was completed to address comments received after the Draft EIS was published. Because much of the alignment along the approach to the airport would be below ground, only the first two views in the "peekaboo" sequence were found to be affected by the proposed LPA. Impacts to these viewsheds could be mitigated using transparent security fencing and other design adaptations; therefore, further analysis confirmed that the proposed LPA would not cause any adverse visual effect to the "peekaboo" sequence along the approach to Dulles Airport.

In addition, VDHR indicated subsequent to the publication of the Draft EIS that the eastern boundary of the Dulles Airport historic district has not been firmly established and may include part or all of the DIAAH. As a result, additional research was conducted to determine what, if any, impact the proposed LPA would have on the DIAAH if it is ultimately included within the historic district. The 1964 *Dulles International Airport*

*Master Plan Report* (Ammann and Whitney et al.) states that some form of transit to the airport would eventually be constructed and suggests that the median of the DIAAH be reserved for such use. "Additional flexibility in the design [of the DIAHH] was incorporated into the planning by reserving space in the median strips and overpassing structures for a third lane…This reserved space might ultimately be employed to provide some form of mass transportation, utilizing either bus of rail transit…" (Ammann and Whitney, et al. 1964:49). Because airport architect Eero Saarinen intended that the median eventually be used for transit, then, the proposed LPA would not constitute an adverse effect on the DIAAH.

## 3.5.1 LONG-TERM EFFECTS

Long-term effects of the proposed LPA and LPA Phase 1 on archaeological and architectural resources would be similar to those noted in Section 3.5.4.3 of the Draft EIS, except as described below. A summary of cultural resources impacts associated with design modifications of the proposed LPA are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) in Table 3.5-2 below.

**Table 3.5-2: Project Effects of Archaeological and Architectural Resources**

| Cultural Resources | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Archaeological Impacts | No adverse effects<br>Continues current conditions | 4 potential adverse effects[1]<br>Project is primarily located in developed areas and would have minimal effects on archaeological resources, except for potential adverse effects to sites 44FX0388, 44LD0380, 44LD0383, and 44LD0378 | One fewer potential adverse effects<br>Additional analysis and design modifications eliminated potential adverse impact to Site 44FX0388 | 3 potential adverse effects<br>Project is primarily located in developed areas and would have minimal effects on archaeological resources, except for potential adverse effects to sites 44LD0380, 44LD0383, and 44LD0378 | No adverse effects<br>Continues current conditions | No adverse effects<br>Continues current conditions |
| Architectural Impacts | No adverse effects<br>Continues current conditions | No adverse effects[1]<br>Project is primarily located in developed areas and would have minimal effects on architectural resources | No change | No adverse effects<br>Project is primarily located in developed areas and would have minimal effects on architectural resources | No adverse effects<br>Project is primarily located in developed areas and would have minimal effects on architectural resources | No adverse effects<br>Project is primarily located in developed areas and would have minimal effects on architectural resources |

[1]These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to the changes in existing conditions discussed above and presented in Table 3.5-1.

#### 3.5.1.1 No Build Alternative

The No Build Alternative would continue current conditions and would have no adverse effects on known archaeological or architectural resources in the corridor.

#### 3.5.1.2 Proposed Locally Preferred Alternative

The long-term effects of the proposed LPA and LPA Phase 1 on cultural resources are described below.

### A. Proposed Full LPA

As shown in Table 3.5-2, the effects associated with the proposed LPA would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- **Site 44FX0388** is no longer adversely affected because of design refinements associated with the relocation of a tie-breaker station.

- The **Hunter Mill Road Historic District (029-5180)** would experience no adverse effect from the proposed LPA or LPA Phase 1. The nearest proposed station is Wiehle Avenue Station to the west, which would not be visible from Hunter Mill Road. Likewise, there would be no visual impact to the historic district from the construction of the Metrorail tracks in the center median of the DIAAH, which is carried over Hunter Mill Road. Two stormwater ponds are proposed north and south of the Dulles Toll Road on the west side of Hunter Mill Road. Although these facilities would be within the boundaries of the historic district, their location directly adjacent to the Dulles Toll Road and the disturbance of Hunter Mill Road in this area as a result of the construction of the DIAAH and Dulles Toll Road would not have an adverse effect on the characteristics that make Hunter Mill Road significant. Finally, because the DIAAH and Dulles Toll Road are the predominant source of noise in the area, noise from Metrorail operations would not change overall noise levels in the district in such a way as to result in an adverse impact. Therefore, there would be no impact on this resource from the proposed LPA or LPA Phase 1.

- **House (53-23), 22017 Shellhorn Road (Route 643), Ryan.** Since the publication of the Draft EIS, the Route 772 Station footprint has been reconfigured to be consistent with proposed development in the vicinity of the station site. Although the footprint of the proposed station facilities has been decreased and relocated closer to the Dulles Greenway, the station would still have some visual impact on the house, and the impact of the proposed LPA on this resource was changed from "no historic properties affected" to "no adverse effect." However, the house is presently abandoned and deteriorating, and the property has been compromised by the construction of commercial warehouses immediately east of the farm and the earlier construction of the Dulles Greenway to the south and west. Moreover, predicted noise and vibration levels do not exceed FTA criteria at this property. Therefore, this resource would not be adversely affected by the proposed LPA.

### B. Proposed LPA Phase 1

Effects associated with the proposed LPA Phase 1 in areas east of the Wiehle Avenue Station would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- **Site 44FX0388** would not be affected by the proposed LPA Phase 1 for the reasons discussed in Section 3.5.1.1 above.

- The **Hunter Mill Road Historic District (029-5180)** would experience no adverse effect from the proposed LPA or LPA Phase 1 for the reasons discussed in Section 3.5.1.1 above.

For areas west of Wiehle Avenue where premium bus service is proposed, effects of the proposed LPA Phase 1 on cultural resources would be similar to those described for the No Build Alternative in the Draft EIS.

If the proposed LPA is not constructed in its entirety, additional parking facilities would be built at the Herndon-Monroe and Route 606 stations to accommodate increased demand for premium bus service in the corridor. However, no archaeological or architectural resources are located within the predicted limits of disturbance for these facilities, and no impact would occur.

### 3.5.2 CONSTRUCTION EFFECTS

Several potential construction staging areas would be located along the corridor (see Figure 2.2-4). These staging areas have been sited to avoid all known archaeological and architectural resources.

Construction effects of the proposed LPA and LPA Phase 1 on archaeological resources would be similar to those noted in Section 3.5.5.3 of the Draft EIS, as none of the sites added since its publication would be located within the predicted limits of disturbance for the alignment or construction staging areas.

Construction effects of the proposed LPA and LPA Phase 1 on architectural resources would also be similar to those noted in Section 3.5.5.3 of the Draft EIS. Only the Hunter Mill Road Historic District has been added since its publication, and because the district already crosses the DIAAH and Dulles Toll Road, noise from construction would not change overall noise levels in the district in such a way as to result in an adverse impact.

Construction effects of the proposed LPA Phase 1 would be less than those associated with the proposed LPA because only about 12 miles of Metrorail would be constructed under the proposed LPA Phase 1, as opposed to the 23 miles of Metrorail that would be built under the full proposed LPA. Moreover, the temporary construction impact to the Dulles Airport historic district described in the Draft EIS would only apply to the full proposed LPA.

### 3.5.3 MITIGATION

No archaeological sites would require mitigation as a result of the proposed LPA or LPA Phase 1. Although three archaeological sites (44LD0380, 44LD0383, and 44LD0378) would likely have direct long-term effects from the proposed LPA, VDHR has determined that none of these sites is eligible for the NRHP.

Because neither the proposed LPA nor LPA Phase 1 would result in adverse impacts to architectural resources in the corridor, no mitigation for these resources would be is proposed.

As design and construction of the project progresses, the need for mitigation of impacts to cultural resources would be decided in consultation with VDHR according to an agreement in the process of being executed between VDHR, FTA, and DRPT, with WMATA, MWAA, and Fairfax and Loudoun counties as concurring parties. Public hearings will provide the public the opportunity to review and comment on the project's effects on historic properties pursuant to the public involvement program of federal Section 106 regulations ("Protection of Historic Properties") of the National Historic Preservation Act.

On August 8, 2003, DRPT received a letter from the Advisory Council on Historic Preservation (ACHP) stating that no further consultation with ACHP regarding the impact of the project on cultural resources is necessary, unless circumstances change (see the Appendix).

Mitigation measures to further minimize impacts to visual components associated with Dulles Airport could include the use of transparent security fencing within peekaboo sequence viewsheds where the alignment is above ground. Mitigation options available to reduce noise impacts to cultural resources are similar to those discussed in Section 3.5.6 of the Draft EIS and Sections 3.7.2 and 4.7.2 of the *Noise and Vibration Technical Report* (June 2002). These include: operational limitations such as speed reductions over switches to reduce the overall cumulative noise; application of petroleum lubricants to track surfaces to reduce wheel noise; strategic placement of switches and crossovers away from vibration-sensitive resources; and the use of vibration dampening materials such as ballast mats under switches in vibration-sensitive locations.

## 3.6 PARKLANDS AND RECREATION AREAS

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on public parklands and recreation areas located within the study area. Changes in evaluation methodology and existing conditions since the publication of the Draft EIS are discussed, followed by the long-term effects, construction effects and proposed mitigation associated with each of the alternatives.

Subsequent to the publication of the Draft EIS, Fairfax County Board of Supervisors adopted the *Countywide Trails Plan* (June 2002), which identifies the general location of several types of trails in the county's planned trail system. In cooperation with Fairfax County, the proposed trail alignments shown in the plan were compared with the project's proposed alignment and facilities to identify potential impacts. The Tysons East Station and associated facilities located adjacent to Scotts Run Stream Valley Park may impact the alignment of a trail planned for the park in addition to potential visual impacts already identified. Likewise, the Tysons Central 7 and Tysons Central 123 stations and their associated facilities could impact the alignment of future trails proposed for the Tysons Corner area. Finally, increased vehicle traffic at the Wiehle Avenue Station may impact future trails planned in its immediate vicinity.

In response to comments from the NVRPA regarding the potential visual effect of Metrorail bridges on the W&OD Railroad Regional Park as part of the proposed LPA and LPA Phase 1, additional analysis was conducted. Concern was expressed that light and openness in the park would be diminished by adding bridges between those of the DIAAH and the Dulles Toll Road. The analysis showed that it is possible to minimize potential impacts by following the principles for minimum Elevation Open Area, height, and width in the *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings.*

Since the publication of the Draft EIS, Hunter Mill Road was designated a Virginia Scenic Byway. The Virginia Byway conservation and historic integrity requirements were studied to determine if the proposed project alignment would impact the historic and scenic value of Hunter Mill Road. Because the segment of Hunter Mill Road affected by the project is located directly adjacent to the Dulles Toll Road and has already been disturbed by the construction of the DIAAH and Toll Road, it was determined that the project would not have an adverse effect on the characteristics that make Hunter Mill Road significant.

In the year following publication of the Draft EIS, the Moorefield Station development plan was approved by Loudoun County. In cooperation with the Loudoun County Planning Department, the effects of the proposed Route 772 station on the development's proposed parklands and recreation facilities were studied. The proposed LPA would improve access to parklands and recreation facilities in this new development.

A detailed discussion of the analysis methodology and the existing parkland and recreation areas within the Dulles Corridor is provided in Section 3.6 of the Draft EIS. The location of the parklands and recreational areas discussed in this Supplemental Draft EIS are shown in Figure 3.6-1a and 3.6-1b.

## 3.6.1 LONG-TERM EFFECTS

Potential long-term effects of the proposed LPA and LPA Phase 1 on parklands and recreation areas would be similar to those identified for the Metrorail Alternative in the table below. A summary of parkland and recreation impacts associated with design modifications of the proposed LPA are presented in relation to the No Build Alternative, the Metrorail Alternative (T6/Y15), and proposed LPA Phase 1 in Table 3.6-1.

**Table 3.6-1: Effects to Parklands and Recreation**

| Parkland and Recreation Areas | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| George Mason High School Athletic Fields | No benefit of increased access | Increased access to transit[1] | No change | Increased access to transit | No effect | No effect |
| Mount Royal Park | No benefit of increased access | Minimal construction-related effects | No change | Minimal construction-related effects | Minimal construction-related effects | Minimal construction-related effects |
| Pimmit Run Stream Valley Park | No benefit of increased access | Minor construction-related effects | No change | Minor construction-related effects | Minor construction-related effects | Minor construction-related effects |
| Olney Park | No benefit of increased access | Minor construction-related effects | No change | Minor construction-related effects | Minor construction-related effects | Minor construction-related effects |
| Westgate Park | No benefit of increased access | Minor construction-related effects | No change | Minor construction-related effects | Minor construction-related effects | Minor construction-related effects |
| Scotts Run Stream Valley Park | No benefit of increased access | Slight visual impact along Route 123. At Tysons East Station, minor construction-related effects[1]<br>Possible impacts to future trails from Tysons East Station[1] | No change | Slight visual impact along Route 123. At Tysons East Station, minor construction-related effects<br>Possible impacts to future trails from Tysons East Station | Possible impacts to future trails from Tysons East Station | Possible impacts to future trails from Tysons East Station |
| Proposed trails in Tysons Corner as shown in the Fairfax County | No benefit of increased access | Possible impacts to future trails from Tysons East Station, Tysons Central 7 | No change | Possible impacts to future trails from Tysons East Station, Tysons Central | Possible impacts to future trails from Tysons East Station, Tysons Central 7 Station, and Tysons | Possible impacts to future trails from Tysons East Station, Tysons Central 7 Station, and Tysons |

| Parkland and Recreation Areas | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| *Countywide Trails Plan* (June 2002) | | Station, and Tysons Central 123 Station[1] | | 7 Station, and Tysons Central 123 Station | Central 123 Station | Central 123 Station |
| Ash Grove Historic Site | No benefit of increased access | Slight noise increase above FTA criteria<br>Minor construction-related effects | No change | Slight noise increase above FTA criteria<br>Minor construction-related effects | Slight noise increase above FTA criteria<br>Minor construction-related effects | Slight noise increase above FTA criteria<br>Minor construction-related effects |
| Wolf Trap National Park for the Performing Arts | No benefit of increased access | No effect | No change | No effect | No effect | No effect |
| Meadowlark Gardens Regional Park | No benefit of increased access | No effect | No change | No effect | No effect | No effect |
| Tamarack Park | No benefit of increased access | No effect | No change | No effect | No effect | No effect |
| Difficult Run Stream Valley Park | No benefit of increased access | Minor construction-related effects. | No change | Minor construction-related effects | Minor construction-related effects | Minor construction-related effects |
| Hunter Mill Road Scenic Byway | No benefit of increased access | No effect[1] | No change | No effect | No effect | No effect |
| W&OD Railroad Regional Park | No benefit of increased access | Noise increase above FTA criteria. Visual effects from reduction of light well<br>Minor construction-related effects | No change | Noise increase above FTA criteria<br>Visual effects from reduction of light well<br>Minor construction-related effects | Noise increase above FTA criteria<br>Visual effects from reduction of light well<br>Minor construction-related effects | Noise increase above FTA criteria<br>Visual effects from reduction of light well<br>Minor construction-related effects |
| Proposed trails in Reston as shown in the Fairfax County *Countywide Trails Plan* (June 2002) | No benefit of increased access | Possible impacts to future trails from Wiehle Avenue Station[1] | No change | Possible impacts to future trails from Wiehle Avenue Station | Possible impacts to future trails from Wiehle Avenue Station | Possible impacts to future trails from Wiehle Avenue Station |
| Hutchinson Elementary School Athletic Fields | No benefit of increased access | No effect | No change | No effect | No effect | No effect |
| Soccer Fields | Not converted to transit use due to private developer proffer | Converted to transit station (Route 28 Station) due to private developer proffer[1] | No change | Converted to transit station (Route 28 Station) due to private developer proffer | Not converted for transit use | Not converted for transit use |

| Parkland and Recreation Areas | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Dulles Proffer | No benefit of increased access | Minor construction-related effects | No change | Minor construction-related effects | No effect | No effect |
| Moorefield Station parks and recreation facilities | No benefit of increased access | Improved access to parkland and recreation facilities[1] | No change | Improved access to parkland and recreation facilities | No effect | No effect |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) due to changes in existing conditions and refined analysis discussed above.

#### 3.6.1.1 No Build Alternative

The No Build Alternative would not provide the same level of increased access to parklands, and would have no physical impacts to parklands. The effects of the No Build Alternative would be similar to those described in the Draft EIS. There would be no project-related effects to parklands from this alternative.

#### 3.6.1.2 Proposed Locally Preferred Alternative

The long-term effects to parklands and recreation areas from the proposed LPA and LPA Phase 1 are described below.

#### A. Proposed Full LPA

As outlined in the table, the long-term effects of the refinements made to the proposed LPA and LPA Phase 1 on parklands and recreation areas are similar to those of the Metrorail Alternative (T6/Y15) evaluated in the Draft EIS with the following exceptions:

- At the proposed Tysons East Station, adjacent to Scotts Run Stream Valley Park, the station's westward shift (north side of Route 123) and park-and-ride and bus bay facilities on the south side of Route 123 may impact the future alignment of a trail planned for the park as shown in the *Countywide Trails Plan* (June 2002).
- The Tysons Central 7 Station and the Tysons Central 123 Station and their associated facilities could impact the alignment of future trails proposed for the Tysons Corner area as shown in Fairfax County's *Countywide Trails Plan* (June 2002).
- To minimize potential impacts to light and openness in the W&OD park, DRPT has determined that it is possible to construct the new Metrorail bridges in compliance with *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings.* These guidelines describe minimum requirements for Elevation Open Area, height, and width. DRPT will continue to coordinate with NVRPA to ensure that enough light and openness remains after construction of the Metrorail bridges for the safety and enjoyment of the trail users.
- Although a wide drainage ditch located on a wooded island in the northwest quadrant of the Hunter Mill Road/Dulles Toll Road interchange between Sunset Hills Road and a Dulles Toll Road ramp would be replaced with a stormwater pond, the pond would not affect the value of Hunter Mill Road as a Scenic Byway.

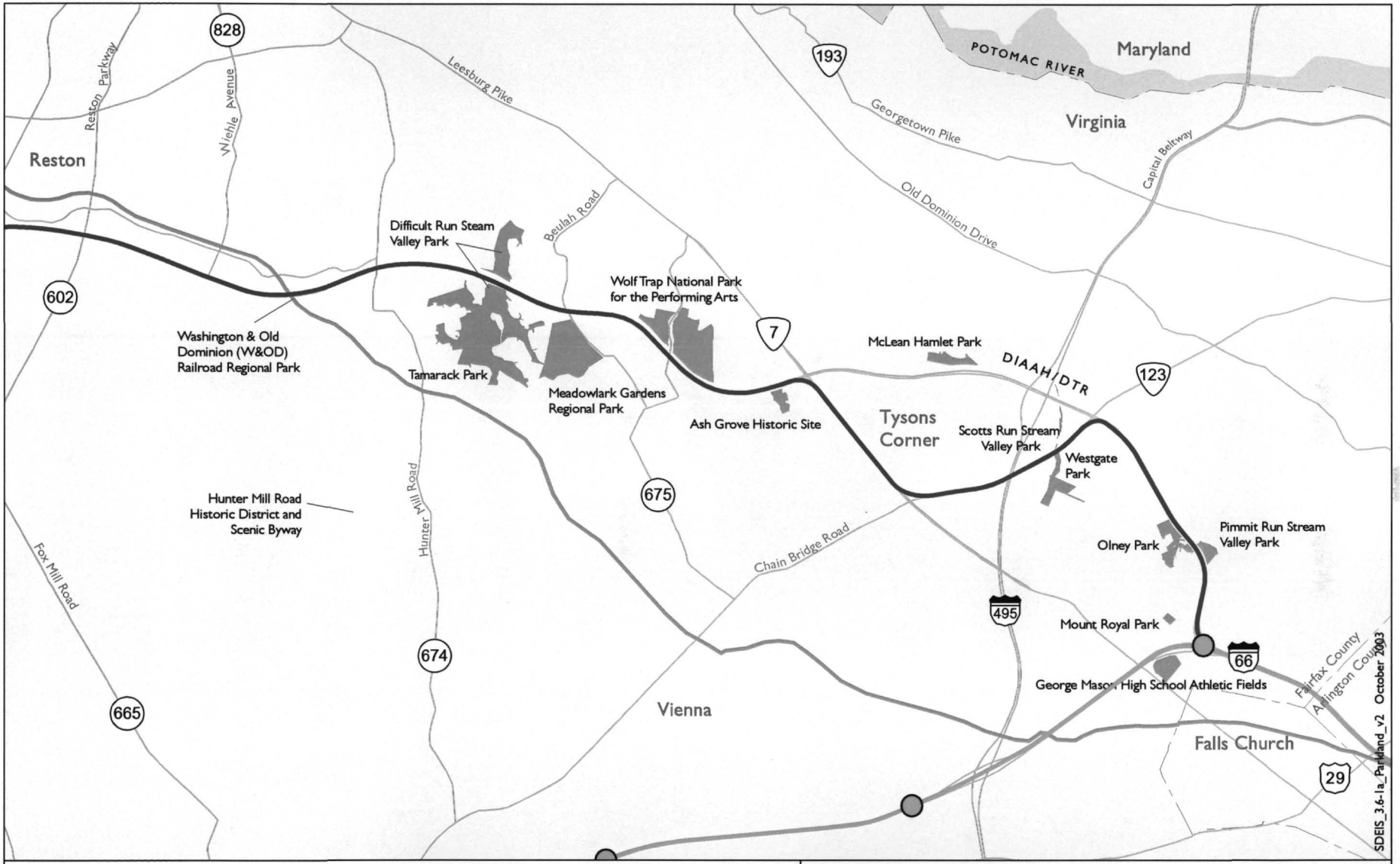



Figure 3.6-1a

# Public Parkland and Recreational Areas

Dulles Corridor Rapid Transit Project

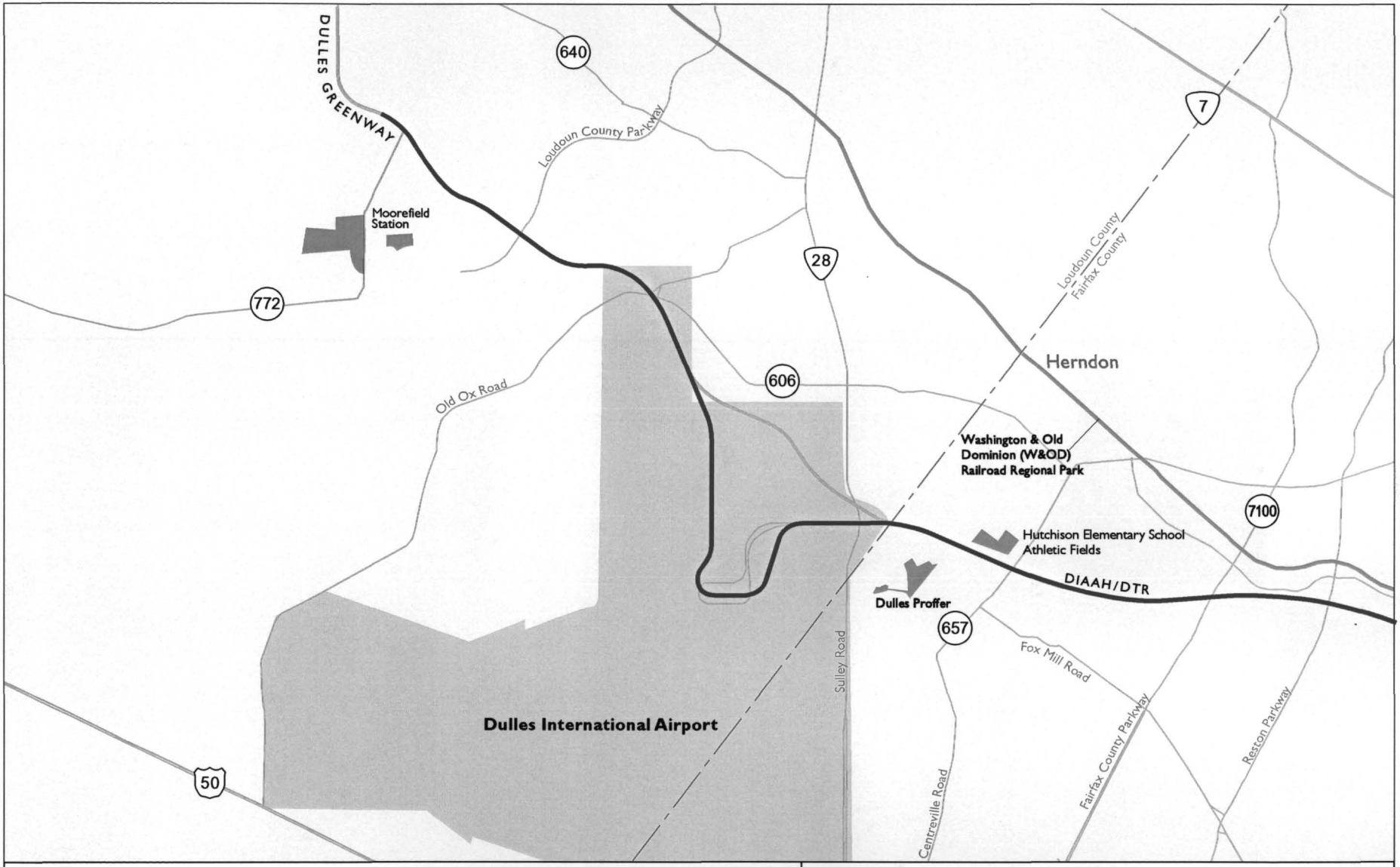



Figure 3.6-1b

# Public Parkland and Recreational Areas

Dulles Corridor Rapid Transit Project

- Increased vehicle traffic at Wiehle Avenue Station may impact future trails proposed in Fairfax County's *Countywide Trails Plan* (June 2002).
- The proposed LPA would have no long-term, negative air quality or noise impacts on the public-use sites planned at the Moorefield Station development located south of the Dulles Greenway and adjacent to the proposed Route 772 Station site. The development plan proposes two "public-use" sites, one for athletic fields that would be slightly more than one-half mile from the station, and the other for a recreation center that would be within one-half mile of the station. Both sites are within walking distance of the station—a benefit for future transit users. B. Proposed LPA Phase 1

Effects associated with the proposed LPA Phase 1, would be similar to those described for the Metrorail Alternative in Table 3.6-1 with the following exceptions:

- As described for the proposed LPA, the proposed Tysons East Station, Tysons Central 7 Station and the Tysons Central 123 Station and their associated facilities are likely to impact the alignment of future trails proposed for the Tysons Corner area, as shown in the Fairfax County *Countywide Trails Plan* (June 2002).
- As described for the proposed LPA, it is possible to construct the new Metrorail bridge over the W&OD Railroad Regional Park in a manner that complies with *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings* for light and openness in the park.
- As described for the proposed LPA, the alignment and its facilities would not affect the value of Hunter Mill Road as a Scenic Byway.
- As described for the proposed LPA, increased vehicle traffic at Wiehle Avenue Station may impact future trails proposed in Fairfax County's *Countywide Trails Plan* (June 2002).
- As described for the proposed LPA, the proposed LPA Phase 1, which proposes premium bus service west of Wiehle Avenue, would have no long-term, negative air quality or noise impacts on the public-use sites planned at the Moorefield Station development. Transit facilities would not impact the proposed "public-use" sites.

If the proposed LPA were not constructed in its entirety by 2025, then areas located west of Wiehle Avenue would have effects similar to the No Build Alternative. No additional effects to parklands and recreation areas would occur.

### 3.6.2 CONSTRUCTION EFFECTS

The six proposed construction staging areas for the proposed LPA were sited to avoid parklands. Other potential construction effects on parklands for the proposed LPA are similar to and would include those discussed in Section 3.6.4 of the Draft EIS for the Metrorail Alternative.

- Minimal construction-related air and noise impacts could occur at the Mount Royal Park from the improvements at the West Falls Church S&I Yard.

- Construction of a bridge over Pimmit Run Stream Valley Park for the proposed LPA would cause a temporary impact by increasing noise, vibration, airborne and waterborne particulates, and sediment.
- Construction of the Tysons East Station associated would temporarily affect Scotts Run Stream Valley Park. Due to construction, temporary increases in noise, vibration, and airborne particulates would occur.
- At Olney Park, Westgate Park, and the Ash Grove Historic Site, temporary increases in noise, vibration, and airborne particulates due to construction of the proposed LPA could occur. There would be no impact to park facility use or access during construction.
- Construction of a bridge over Difficult Run Stream Valley Park would cause a temporary impact by increasing noise, vibration, and airborne and waterborne particulates.
- Construction of a bridge over W&OD Railroad Regional Park, using simple beam techniques, would result in temporary increases in noise, vibration, and airborne particulates. No bridge piers would be placed in the park; piers would be spaced in order to avoid parklands.
- At the Dulles Proffer, temporary increases in noise, vibration, and air-borne particulates due to construction of the Route 28 Station could occur. There would be no impact to park facility use or access during construction of the proposed LPA. There would be no impact to park facility use or access during construction.

Additional construction effects associated with the proposed LPA (beyond those identified for the Metrorail Alternative) would result from construction of the Route 772 Station. At the proposed recreation center and athletic fields at the Moorefield Station development, temporary increases in noise, vibration, and air-borne particulates could occur. However, because the construction activities would be at least one-half mile from these sites, there would be no impact to the park facility use or access during construction of the proposed LPA.

For the proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities at Route 772 for premium bus service could have similar effects to those described above for the Route 772 Station.

### 3.6.3 MITIGATION

With the exception of the proposed mitigation of temporary construction impacts at the Moorefield Station recreation center and athletic fields, available mitigation options would be similar to those discussed in Section 3.6.5.3 of the Draft EIS. These include:

- The use of best management practices (BMPs) to control stormwater and sediment during construction at Pimmit Run Stream Valley Park, Scotts Run Stream Valley Park, Difficult Run Stream Valley Park, and the W&OD Railroad Regional Park;
- Timing of construction during low-use periods to minimize disruption of regular park activities and maintain access to trails during hours of peak use;

- Construction of the new Metrorail bridge over the W&OD Railroad Regional Park according to the *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings*; and
- Possibly, light wells to reduce visual impacts to trail users at Pimmit Run Stream Valley Park, Difficult Run Stream Valley Park, and the W&OD Railroad Regional Park.

## 3.7 SAFETY AND SECURITY

This section presents the potential effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on the safety and security issues of the Dulles Corridor Rapid Transit Project.

Changes in conditions since the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects, and available mitigation. Detailed descriptions of the legal and regulatory context, analysis methodology, and safety and security procedures and issues within the existing Metrorail and Metrobus system were provided in Section 3.7 of the Draft EIS.

Safety refers to the provision of safe conditions for passengers, employees, and pedestrians within the Metro system. The WMATA safety procedures in place at the time the Draft EIS was published are still considered effective and are described in Section 3.7.3 below.

Security refers to the enforcement of laws and the protection of passengers, employees, and pedestrians within the Metro System. Particular attention has been given by WMATA to security issues following the events of September 11, 2001. WMATA has been proactive and vigilant regarding security and has requested federal funds that have resulted in new security systems and initiatives including the expansion of the chemical sensor program. Trash and recycling bins have been removed from platforms and replaced with bomb containment bins at mezzanines. Additional K-9 units are now in place. In addition, the U.S. Departments of Energy and Homeland Security's Office of Domestic Preparedness presented the Metro Transit Police Department (MTPD) with radiological detection equipment. MTPD also is staffing the department's Joint Operations Command Center, and continues to receive regular updates from the Federal Bureau of Investigation (FBI) Terrorism Task Force and the region's chiefs of police. These steps complement the many security practices that WMATA has followed for years.

Through coordination efforts with the MWAA, Federal Aviation Administration (FAA), MTPD, and the Transportation Security Agency (TSA), security planning for the project would necessarily need to be continually refined. Of particular interest are issues related to possible intrusion onto Dulles Airport property of rail facilities including the Dulles Airport Metrorail Station and S&I Yard Site 15. Construction issues must also be considered including the use of mined or cut-and-cover construction methods for underground segments, security requirements for construction personnel, operational issues related to site security, coordination of security clearances, and emergency response.

As described in the Draft EIS, crime in the Metro system varies by setting, with most crime occurring in parking lots at the outlying areas of the system. Table 3.7-1 of the Draft EIS summarized the numbers of crimes from 1996 to 2000 by setting within the system. Crimes include arson, assault, larceny, motor vehicle theft, attempted motor vehicle theft, homicide, and robbery. Additional crime data was obtained for the years 1998 through 2002, and is as follows:

**Table 3.7-1: Numbers of Crimes by Setting**

| Setting | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|
| Bus | 56 | 69 | 52 | 76 | 75 |
| Rail | 334 | 232 | 333 | 313 | 400 |
| Parking Lots | 726 | 666 | 686 | 1,123 | 986 |

## 3.7.1 LONG-TERM EFFECTS

The potential long-term safety and security effects associated with the proposed LPA refinements, including the proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) are summarized below.

### 3.7.1.1 No Build Alternative

The effects of the No Build Alternative would be the same as those described in the Draft EIS for the existing Metrorail system. There would be no project-related effects to safety and security from this alternative.

### 3.7.1.2 Proposed Locally Preferred Alternative

Described below are the long-term effects of the proposed LPA and LPA Phase 1 on safety and security.

#### A. Proposed Full LPA

In the Draft EIS, one emergency access shaft for a section of underground alignment was located in the secure zone at Dulles Airport. For the proposed LPA, two shaft locations would be provided outside of the secure zone. There would be no tunnel ventilation shafts located within the airport secure zone.

The proposed LPA would be subject to safety and security concerns similar to the current Metrorail system, and to those presented for the Metrorail Alternative (T6/Y15) in the Draft EIS. These concerns include fire, derailment, loss of power, flooding, structural collapse, hazardous materials incidents, criminal acts, extreme weather, or medical emergencies. Further, as discussed in the Draft EIS, there would be a need to account for additional security issues relating to project work and operations on or near Dulles Airport. The issues and solutions affecting the Metrorail system in proximity to an airport are similar to those already in place or being resolved by WMATA for National Airport.

Mutual Aid Agreements would need to be developed between WMATA, MWAA, Fairfax County, Loudoun County, Town of Herndon, and Virginia State Police. Emergency response at stations proposed at Dulles Airport or along the DIAAH and on airport property would be subject to MWAA review and MWAA standards for fire and life safety issues, regardless of existing Mutual Aid Agreements. The Mutual Aid Agreement between MWAA and WMATA would address the interoperability for Metrorail operations at the Dulles Airport Station. This would include issues of policing and security measures, including all possible terrorist activity, access by WMATA employees for routine maintenance and operations matters, as well as keeping the restricted area secure at all times. Because the proposed LPA would include an underground portion, which would pass through the Dulles Airport restricted area; special attention will be given to the design of this portion of the alignment. Planning and coordination will be maintained with TSA, MWAA, and FAA on these issues in advance of the design and construction phases of the project.

Additional issues are addressed in Section 3.7.6.1 of the Draft EIS and are unchanged except as would be needed to upgrade security to meet future changes to federal, state and local security requirements.

### B. Proposed LPA Phase 1

For the proposed LPA Phase 1, safety and security effects would be similar to those described for the proposed LPA east of and including the Wiehle Avenue Station. Safety and security effects at premium bus facilities would be similar to those described for the proposed LPA west of the Wiehle Avenue Station.

If the proposed LPA were not constructed in its entirety by 2025, then safety and security effects west of Wiehle Avenue would be similar to the No Build Alternative.

## 3.7.2 CONSTRUCTION EFFECTS

Short-term safety concerns associated with construction of the proposed LPA would be similar to those documented in Section 3.7.5 of the Draft EIS.

Construction activities in the Tysons Corner area, along the DIAAH and Dulles Toll Road, and along the Dulles Greenway—especially for pedestrian bridges and rail aerial structures—would result in temporary lane closures, diversion of traffic, and removal of shoulders, potentially affecting traffic safety. However, the contractor would ensure that the effects are minimized by following applicable state and local codes as well as industry standards and would perform the work during off-peak hours to the extent possible. Traffic safety maintenance measures, such as signage, would be employed to minimize the effects. In addition, the contractor would coordinate with applicable authorities, including VDOT, to ensure that affects related to construction on the roadways are minimized.

Other construction-related safety and security concerns include safety of the public and the construction workers in and around the construction areas. The operator would follow applicable state and local codes as well as the operator's standards such as erecting temporary construction fencing and providing the public with information regarding the construction activities to minimize potential effects. Coordination will continue with TSA regarding security procedures for all construction personnel as well as construction activities at Dulles Airport.

For the proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have minimal construction safety concerns.

## 3.7.3 MITIGATION

Proposed mitigation for the proposed LPA and LPA Phase 1 would be similar to the available mitigation options described in Section 3.7.6 of the Draft EIS; additional mitigation resulting from design refinements made to the proposed LPA and LPA Phase 1 would not be warranted.

Available strategies to reduce safety impacts associated with construction activities include: the use of BMPs and adherence to WMATA's Construction Safety Methods Manual; temporary construction fencing and watchmen to protect the public and the worksite from unauthorized entry of vehicles, people, and animals; and temporary signage to direct motorists and pedestrians around construction areas. Available strategies to reduce operational safety and security impacts include: improved signal timing; improved pedestrian crossings; fencing; signage; and implementation of the WMATA operations plan and existing WMATA safety and security practices. In addition, regular public meetings and notifications, including WMATA's Coordinated Safety Program and

Strategic Marketing and Communications Public Involvement Program, would be used to promote public awareness and information.

## 3.8 ENVIRONMENTAL JUSTICE

This section presents the potential effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on Environmental Justice populations. Refinements in evaluation methodology and changes in existing conditions since the publication of the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects and available mitigation. A detailed description of the legal and regulatory context, analysis methodology, and environmental justice populations is provided in Section 3.8 of the Draft EIS.

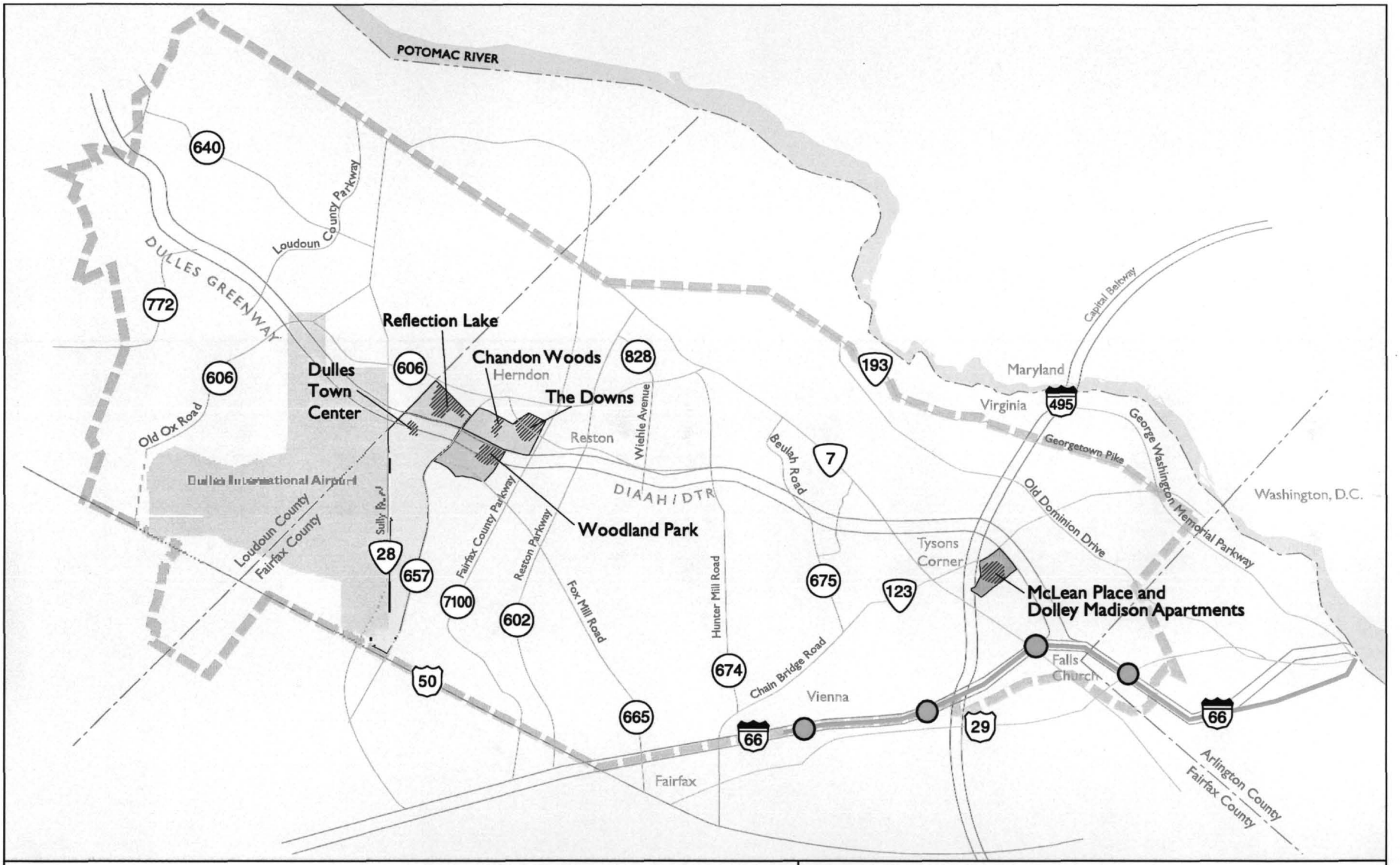
The description and identification of Environmental Justice communities as described in the Draft EIS have been refined to reflect the modifications to the methodology for identifying Environmental Justice populations. Rather than identifying U.S. Census 2000 block groups with populations that are at least 50 percent minority or are at least 10 percent higher than the average for Fairfax and Loudoun counties, the new methodology requires that U.S. Census 2000 block groups with populations that are at least 50 percent minority or are at least 10 percent higher than the minority population of the county or the study area as a whole. A new summary of percentages is presented in Table 3.8-1, and the locations of the environmental justice communities are shown in Figure 3.8-1.

**Table 3.8-1: Census Blocks That Meet Environmental Justice Thresholds**

| Tract/Block Group | Geographic Description | Amer. Indian/ Alaskan Native | Black (not Hispanic origin) | Asian/ Pacific Islander | Hispanic | Total Minority |
|---|---|---|---|---|---|---|
| 4712 BG4 | McLean Place townhouses and Dolley Madison Apartments located east of Tysons Corner | 0.6% | 4.7% | 20.0% | 12.7% | **44.5%** |
| 4809 BG4 | The Downs located north of the DIAAH between Fairfax County Parkway, Coral Road, and Van Buren Street | 0.0% | 0.0% | **22.8%** | 1.8% | 28.6% |
| 4809 BG8 | The Chandon Woods located north of the DIAAH between Van Buren Street, Alabama Drive, and Centreville Road | 0.0% | 8.2% | **36.8%** | 9.4% | **54.5%** |
| 4809 BG9 | The Chandon Woods located north of the DIAAH between Van Buren Street, Alabama Drive, and Centreville Road | 1.0% | 7.5% | 13.0% | **31.0%** | **56.0%** |
| 4810 BG1 | Reflection Lake located north of the DIAAH and bordered by Elden Street, the Loudoun County line and the Town of Herndon | 0.3% | 13.7% | 15.6% | **25.1%** | **58.6%** |
| 4811 BG1 | Woodland Park located southwest of the Monroe Street and Sunrise Valley Road intersection | 0.2% | 13.5% | 26.1% | **12.4%** | **54.0%** |
| 4825 BG8 | Dulles Town Center located south of the DIAAH and bordered by the Dulles Toll Road, Centreville Road, Sully Road, and Lee Highway | 0.4% | 13.0% | 11.8% | **22.6%** | **54.2%** |
| Fairfax County | | 0.2% | 8.4% | 12.8% | 11.0% | 35.7% |
| Study Area | | 0.3% | 6.1% | 12.3% | 8.8% | 30.9% |

Percentages that meet minority thresholds are in bold.
Source: U.S. Census Bureau, GCT-PL: 2000 U.S. Census Race and Hispanic or Latino.

Descriptions of the communities were modified to reflect the refined analysis. Using the modified threshold, an additional community was identified in Tract 4809, Block Group 4, The Downs, bringing the total number of Environmental Justice communities to seven. The modifications also involved changing Tract 4712, Block Group 3, to Tract 4712, Block Group 4. This action changed the affected Tysons Corner neighborhoods by




LEGEND

- Existing Orange Line Metrorail and Stations
- County Boundary
- Neighborhoods
- Dulles Corridor Limits
- Census Tract 4809 Block Groups 4, 8 & 9
- Census Tract 4810 Block Group 1
- Census Tract 4811 Block Group 1
- Census Tract 4712 Block Group 3
- Census Tract 4825 Block Group 8

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

0 1 2 3 MILES

Figure 3.8-1

# Environmental Justice Communities

Dulles Corridor Rapid Transit Project

dropping The Commons neighborhood, and adding the McLean Place townhouses and the Dolley Madison Apartments. A description of the added Block Group and the newly added neighborhoods follows. Tract 4809, Block Group 4 is located on the north side of the DIAAH and Dulles Toll Road between Fairfax County Parkway, Coral Road, and Van Buren Street and includes The Downs, a predominantly single-family subdivision. This block group meets the minority threshold because the Asian population is more than 10 percent higher than the Asian population of the study area as a whole. Tract 4712, Block Group 4 is located east of Tysons Corner and is bordered by Dolley Madison Boulevard, I-495, Magarity Road, and Scott Run (within one-half mile of the Tysons East Station). This block group is largely comprised of multi-family residential neighborhoods, including the McLean Place townhouses and the Dolley Madison Apartments at Tysons. This neighborhood meets the minority threshold because the total minority population is more than 10 percent higher than the minority population of the study area as a whole.

### 3.8.1 LONG-TERM EFFECTS

Although the revised methodology resulted in the addition of another Environmental Justice community, the potential long-term effects of the proposed LPA would be similar to those noted in Section 3.8.4 of the Draft EIS, which found no disproportionate impacts to Environmental Justice communities within the Dulles Corridor. A summary of Environmental Justice community impacts associated with design modifications of the proposed LPA, including the proposed LPA Phase 1, are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15), in Table 3.8-2 below.

**Table 3.8-2: Effects to Environmental Justice Communities**

| Environmental Justice Communities (Census Tract, Block Group) | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| McLean Place Townhomes, Dolley Madison Apartments at Tysons (Tract 4712, BG4) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the proposed Tysons East Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | No change | Located within ½ mile of the proposed Tysons East Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the proposed Tysons East Station<br>Increased access to transit through Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the proposed Tysons East Station<br>Increased access to transit through Metrorail Service<br>No disproportionate impacts |
| The Downs (Tract 4809, BG4) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | No change | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts |
| Chandon Woods (Tract 4809, BG8) | No benefit of increased | Located within ½ mile of the Herndon- | No change | Located within ½ mile of the | Located within ½ mile of the | Located within ½ mile of the |

| Environmental Justice Communities (Census Tract, Block Group) | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| | mobility through Metrorail or premium bus service | Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | | Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts | Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts |
| **Chandon Woods** (Tract 4809, BG9) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts. | No change | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts |
| **Reflection Lake** (Tract 4810, BG1) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | No change | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts |
| **Woodland Park** (Tract 4811, BG1) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | No change | Located within ½ mile of the Herndon-Monroe Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts | Located within ½ mile of the Herndon-Monroe Stop<br>Transit via the proposed premium bus service[1]<br>No disproportionate impacts |
| **Dulles Town Center** (Tract 4825, BG8) | No benefit of increased mobility through Metrorail or premium bus service | Located within ½ mile of the proposed Route 28 Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | No change | Located within ½ mile of the proposed Route 28 Station<br>Increased access to transit via proposed Metrorail Service<br>No disproportionate impacts | Access to transit at the Herndon-Monroe Stop via the proposed premium bus service[1]<br>No disproportionate impacts | Access to transit at the Herndon-Monroe Stop via the proposed premium bus service[1]<br>No disproportionate impacts |

[1] Premium bus service would be high quality bus service west of Wiehle Avenue meant to replicate rail service

#### 3.8.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those described in the Draft EIS. There would be no project-related Environmental Justice effects from this alternative.

#### 3.8.1.2 Proposed Locally Preferred Alternative

The effect of the proposed LPA and LPA Phase 1 on environmental justice populations is described below.

#### A. Proposed Full LPA

The implementation of the design refinements made to the proposed LPA would result in long-term effects to environmental justice populations that are similar to those described for the Metrorail Alternative (T6/Y15) in Table 3.8-2. No disproportionate impacts would occur.

#### B. Proposed LPA Phase 1

As outlined in the table and as with all areas west of Wiehle Avenue, the proposed LPA Phase 1 would not provide the Chandon Woods, Woodland Park, The Downs, Reflection Lake, or Dulles Town Center communities with the same type of transit service provided to areas east of Wiehle Avenue. The proposed LPA Phase 1 would provide Metrorail service from West Falls Church to Wiehle Avenue and premium bus service from Wiehle Avenue to Route 772. Therefore, the only Environmental Justice community that would have direct access to Metrorail service with the proposed LPA Phase 1 is the community associated with the McLean Place Townhomes and Dolley Madison Apartments, which are near Tysons East Station. The Chandon Woods, Woodland Park, The Downs, Reflection Lake, and Dulles Town Center communities would have access to the proposed premium bus service, which could be accessed at the Herndon-Monroe Bus Stop. In 2025, all of the communities except the Dulles Town Center would be within one-half mile of the Herndon-Monroe facility. Disproportionate impacts would not occur.

### 3.8.2 CONSTRUCTION IMPACTS

The potential for disproportionate effects to minority and low-income populations associated with construction of the proposed LPA would be similar to that described in Section 3.8.5 of the Draft EIS for the Metrorail Alternative. The proposed construction staging areas could result in short-term air quality and visual impacts along the proposed LPA alignment. These staging areas were sited to avoid disproportionate effects on any of the identified minority communities.

For the proposed LPA Phase 1, the potential for disproportionate construction effects would be much lower than that for the proposed LPA because most of the identified minority communities are located west of Wiehle Avenue Station. Construction of facilities for premium bus service under the proposed LPA Phase 1 would have limited potential for disproportionate effects. Construction of Metrorail from the Orange Line to Wiehle Avenue would not disproportionately affect the one minority community in this portion of the corridor.

### 3.8.3 MITIGATION

No disproportionate impacts to minority or low-income populations are anticipated from either the proposed LPA or LPA Phase 1. Therefore, no mitigation is proposed.

Outreach to minority populations described in Section 3.8.8 of the Draft EIS would continue throughout the *National Environmental Policy Act of 1969* (NEPA) process and the design and construction phases of the

project. Contacts within minority communities, including presidents of neighborhood associations, resident managers, property management companies, and neighborhood resource coordinators, are included on the project mailing list to ensure adequate public outreach to minority populations. Any press releases advertising public hearings or other public project meetings will be sent to communications outlets directed toward minority communities in the region, including *Asian Fortune*, *El Tiempo Latino*, *Impacto* (Latino), *Iran Times*, *Pho No* (Vietnamese), *Washington Afro-American*, *Washington Hispanic*, *Metro Herald* (African American), Telemundo TV (Latino), WHUR FM (African American), and WKYS FM (African American).

# 4 ENVIRONMENTAL EFFECTS

This chapter presents the potential long-term and construction effects of the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1, and No Build Alternative on the natural and built environment.

## 4.1 GEOLOGIC RESOURCES

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on geologic resources.

### 4.1.1 LONG-TERM EFFECTS

Potential long-term impacts of the proposed LPA, including LPA Phase 1, would be the similar to those described in the Draft EIS for geology, topography, groundwater, soils, and prime farmland. Table 4.1-1 provides a summary of geologic resource impacts associated with the refinements of the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 4.1-1: Effects to Geologic Resources**

| Geologic Resource | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Geology | None | Minor | No change | Minor | None | None |
| Topography | None | Minor | No change | Minor | None | None |
| Soils | None | Minor | No change | Minor | None | None |
| Prime Farmlands[1] | None | None | No change | None | None | None |
| Groundwater | None | Minor | No change | Minor | None | None |

[1]Affected Prime farmland soils would not be usable as prime farmland because of their small size and isolated nature.

#### 4.1.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those described in the Draft EIS. There would be no project-related impacts to geology and topography from this alternative.

#### 4.1.1.2 Proposed Locally Preferred Alternative

The long-terms effects of the proposed LPA and LPA Phase 1 are described below.

### A. Proposed Full LPA

The effects associated with the proposed LPA would be similar to those described in the Draft EIS except at the Route 772 Station facilities south of the Dulles Greenway.

The new Route 772 Station configuration would affect an additional small non-contiguous sliver (less than 0.1 acre) of prime farmland. The present land use for the area surrounding the Route 772 is open space; agriculture is not one of the permitted uses under this area's zoning. In addition, the Loudoun County Board of Supervisors recently approved the Moorefield Station development at this location. Moorefield Station will include 9 million square feet of commercial development and 6,000 dwelling units on 600 acres. This development encompasses the sliver of prime farmland that would be affected.

### B. Proposed LPA Phase 1

Effects associated with proposed LPA Phase 1 are similar to and would include those described in the Draft EIS for the Metrorail Alternative (T6/Y15) from the end of the Orange Line at West Falls Church Station to Wiehle Avenue Station. West of Wiehle Avenue Station, no additional effects would occur as a result of the premium bus service that would operate in conjunction with proposed LPA Phase 1.

No additional effects to geologic resources would occur if the full LPA were not implemented in 2025.

## 4.1.2 CONSTRUCTION EFFECTS

The construction effects to geologic and soil resources that would result from the implementation of the proposed LPA and its construction phases would be similar to those documented in the Draft EIS under the Metrorail Alternative (T6/Y15) and are summarized in the sections below.

For proposed LPA Phase 1, construction effects would be similar to those described for the proposed Full LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have minimal effects on geologic resources.

### 4.1.2.1 Geology, Topography, Soils, and Groundwater

Short-term impacts on the existing geology, topography, and soils in the area would be anticipated. Best management practices (BMPs) for subsurface conditions at specific areas would be used during intrusive activity, thereby minimizing any short-term impacts to geologic structures during project construction.

Potential construction effects of the proposed LPA on the geology, topography and soils underlying the study area would be associated with the following activities: leveling for the tracks, mostly in the median of the Dulles International Airport Access Highway (DIAAH); clearing, grubbing, and leveling for the Metrorail Service and Inspection (S&I) Yard; constructing new embankments or altering existing embankments at bridge and tunnel approaches; drilling piers and piles for aerial structures, and earth removal activities for the tunnel sections in Tysons Corner and at Dulles Airport. Surface excavations, construction of tunnels, hill cuts, and pile driving would be the most intrusive construction methods.

Some soils within the corridor have characteristics that would need to be considered as part of design and construction. Several soil types have moderate to poor drainage, a high to very high shrink-swell potential, and/or a high water table. In addition, some soils on steep slopes have high erosion potentials. There is also a possibility of exposing soils overlying greenstone bedrock that could contain fibrous asbestos minerals.

Because the proposed LPA would involve construction of underground segments of the alignment, minor impacts to groundwater quality, temporary groundwater depletion, and/or stormwater discharge could occur. Excavation for retained fill sections for the stations and underground sections could encounter groundwater, but short-term effects are expected to be minimal. Where groundwater could be encountered, wells can be constructed and groundwater pumped out for the purpose of depressing groundwater elevations in the vicinity of the work. The underground sections would be waterproofed to inhibit the flow of groundwater into the tunnel after construction. Groundwater elevations are expected to return to preconstruction levels when construction of underground segments is complete.

#### 4.1.2.2 Prime Farmland

No construction effects to prime farmland are expected from implementing the proposed LPA.

### 4.1.3 MITIGATION

Available mitigation options for impacts to geologic resources resulting from the proposed LPA and proposed LPA Phase 1 would be similar to those described in Section 4.1.6 of the Draft EIS and include the following:

- BMPs to reduce the potential for temporary construction impacts to surface water resources in the corridor, including pollution control devices, spill prevention programs, installation and maintenance of runoff diversion structures and secondary containment structures;
- Other sediment and control measures; preparation and submission of an erosion and sediment control plan to the appropriate soil and water conservation jurisdictions;
- Preparation and submission of an asbestos control compliance plan to the Fairfax County Health Department prior to construction activities in areas with the potential for asbestos-containing soils; and
- Geotechnical studies and test programs prior to construction of underground sections.

## 4.2 WATER RESOURCES

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on water resources. Water resources include wetlands, surface water quality, floodplains, critical areas, river and stream corridor overlay districts, Chesapeake Bay Preservation Areas, environmental quality corridors, the coastal zone, wild and scenic rivers, streams, and hazardous wildlife attractants at or near airports (see Figures 4.2-1a and 4.2-1b). Changes in evaluation methodology and existing conditions since the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects and mitigation.

Through coordination with the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), and the Virginia Department of Environmental Quality (VDEQ) and subsequent refinement of the evaluation methodology, changes in potential long-term impacts to wetlands from those described in the Draft EIS are outlined below. These changes are also reflected in Table 4.2-1.

- The headwaters of a tributary to Horsepen Run W-OWA would no longer be affected, resulting in an elimination of the effect to this stream (e.g., alteration of base flow along 80 linear feet of the stream).
- A new wetland system, W-RISA, was identified on the finalized version of the Jurisdictional Determination mapping completed by the Metropolitan Washington Airports Authority (MWAA) for

Dulles Airport after June 2002 (see Figures 4.2-1a and 4.2-1b). Therefore this wetland was not included in the Draft EIS. W-RISA is a palustrine forested wetland that has a principal function of flood control. The lead track to S&I Yard 15 would impact approximately 0.1 acre of wetland system W-RISA.

- The proposed aerial structure for the Metrorail guideway from Autopilot Drive to the median of the Dulles Greenway would affect approximately 0.4 acres of W-FB/FBA/FF and 0.2 acre of W-RIS. In addition, construction of the proposed yard lead to S&I Yard Site 15 would permanently impact an additional 3.0 acres of W-RIS. These effects were considered temporary in the Draft EIS. As a result of further coordination with the USACE, the effect of converting forested wetland to emergent wetland is now considered a long-term permanent impact.

The legal and regulatory context described in Section 4.2.1 of the Draft EIS has changed as follows:

- Amendments to the Chesapeake Bay Preservation Ordinance have been proposed by Fairfax County and include revisions of the resource protection area (RPA) definition and establishment of intensely developed areas (IDAs). Establishment of IDAs may result in some changes to the evaluation of long-term effects. It is anticipated that the Fairfax County Board of Supervisors will meet to discuss and/or vote to amend the existing ordinance in November 2003.
- A small portion of the Dulles Corridor within Fairfax County lies within Virginia's Coastal Zone. Therefore, the project also must be carried out in a manner that is consistent with the Commonwealth's Coastal Resources Management Program.

### 4.2.1 LONG-TERM EFFECTS

Potential long-term impacts of the proposed LPA and proposed LPA Phase 1 would be similar to and include those described in the Draft EIS for wetlands, surface water quality, floodplains, critical areas, river and stream corridor overlay districts, Chesapeake Bay Preservation Areas, environmental quality corridors, the coastal zone, wild and scenic rivers, streams, and hazardous wildlife attractants at or near airports.

Table 4.2-1 provides a summary of impacts to water resources associated with design refinements of the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

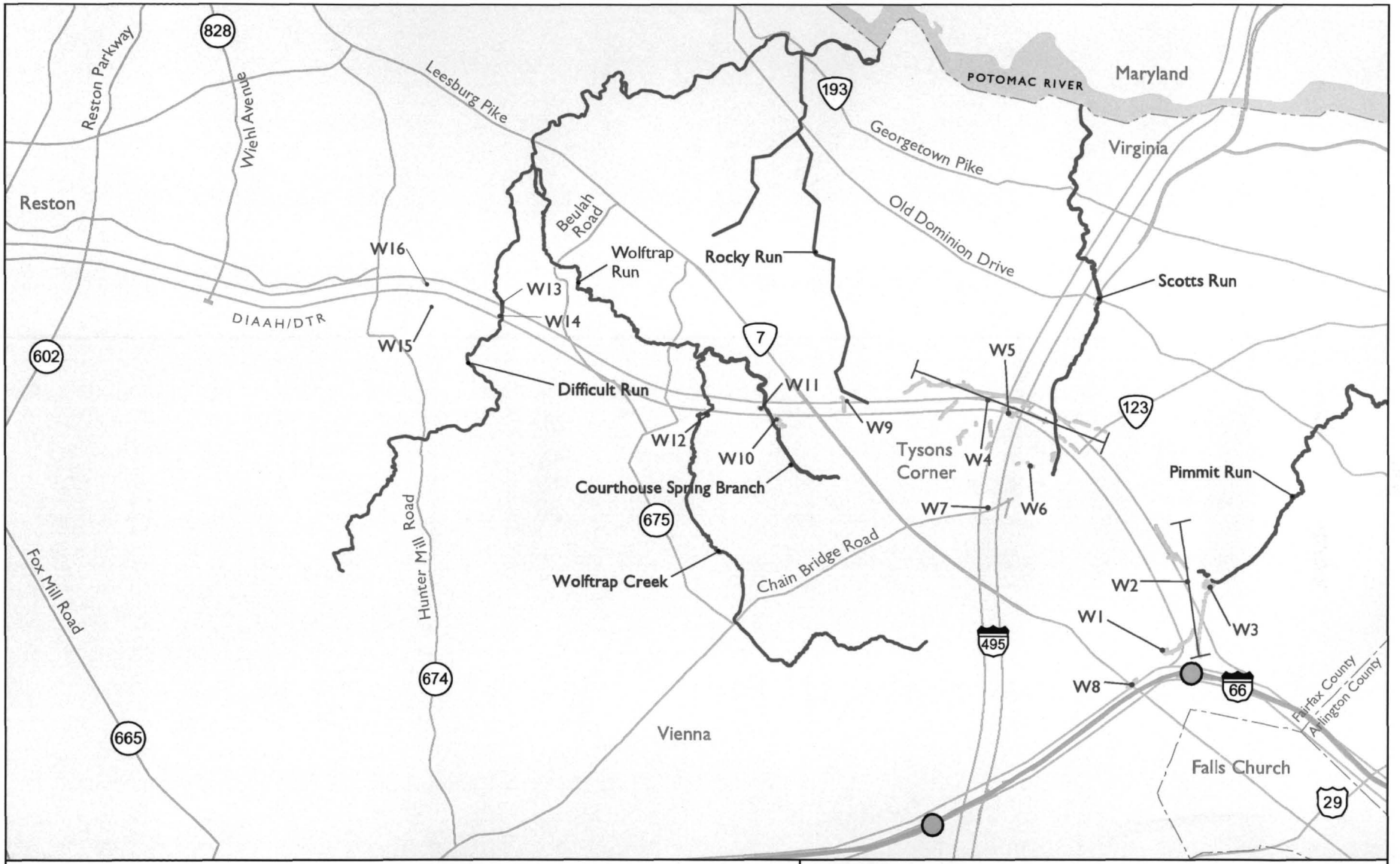
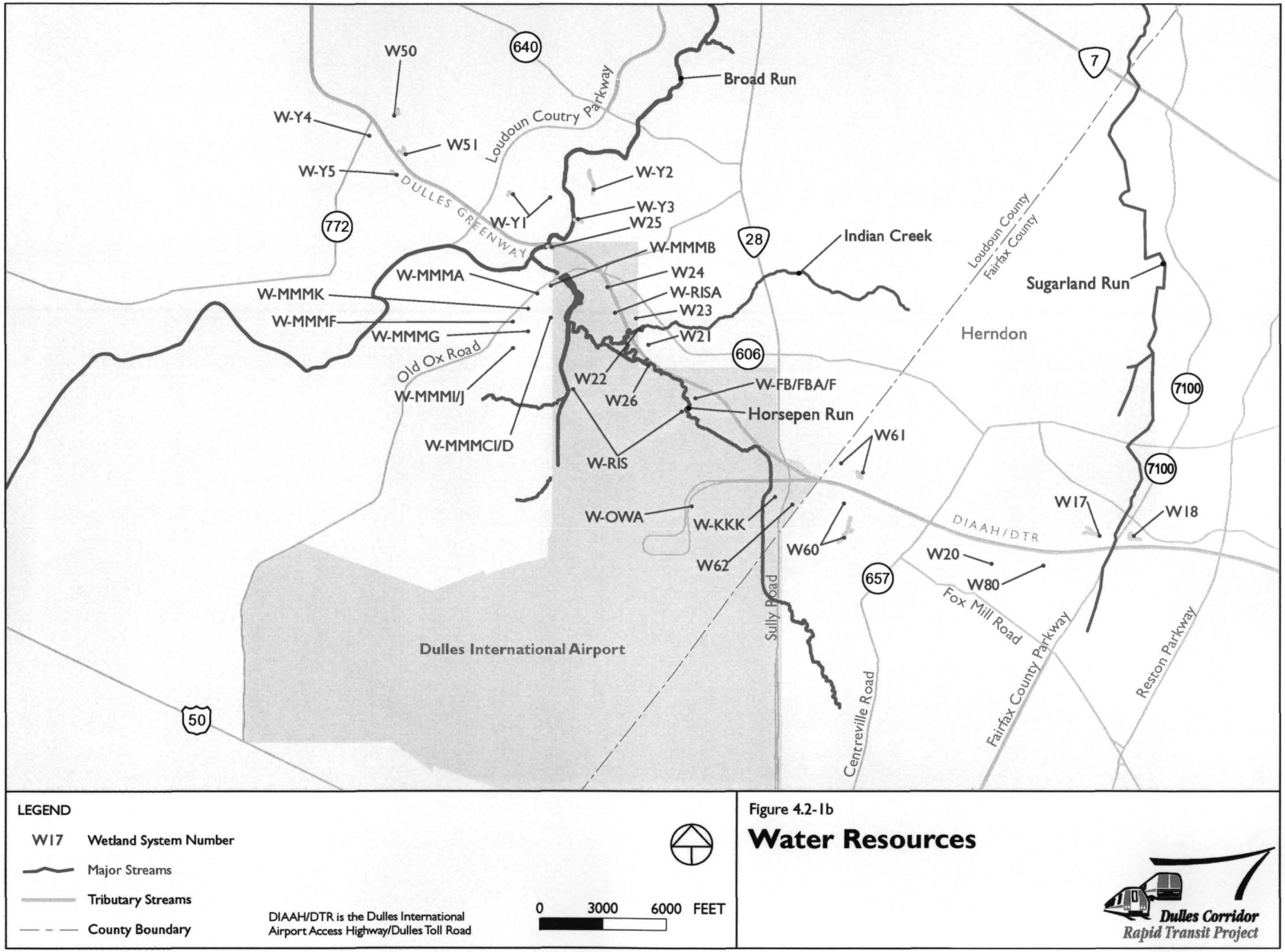



Figure 4.2-1a

# Water Resources

Dulles Corridor Rapid Transit Project




LEGEND

W17 Wetland System Number

Major Streams

Tributary Streams

County Boundary

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

0 3000 6000 FEET

Figure 4.2-1b

## Water Resources

Dulles Corridor Rapid Transit Project

**Table 4.2-1: Effects to Water Resources**

| Wetland System | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Pimmit Run (W-2) | None | Proximity[4]<br>Floodplain[5]<br>CBPA[6]<br>Water Quality[6] | No change | Proximity[4]<br>Floodplain[5]<br>CBPA[6]<br>Water Quality[6] | Proximity[4]<br>Floodplain[5]<br>CBPA[6]<br>Water Quality[6] | Proximity[4]<br>Floodplain[5]<br>CBPA[6]<br>Water Quality[6] |
| Scotts Run (W-4) | None | Floodplain[5]<br>CBPA[6]<br>EQC[6] | No change | Floodplain[5]<br>CBPA[6]<br>EQC[6] | Floodplain[5]<br>CBPA[6]<br>EQC[6] | Floodplain[5]<br>CBPA[6]<br>EQC[6] |
| Unnamed Perennial Stream (W-4) | None | None | No change | None | None | None |
| Intermittent Stream (W-63) | None | None | No change | None | None | None |
| Intermittent Stream (W-9) | None | None | No change | None | None | None |
| Difficult Run (W-13) | None | Proximity[4]<br>Floodplain[5] | No change | Proximity[4]<br>Floodplain[5] | Proximity[4]<br>Floodplain[5] | Proximity[4]<br>Floodplain[5] |
| Sugarland Run (W-17) | None | Proximity[4] | No change | Proximity[4] | None | None |
| Channel (W-18) | None | Proximity[4] | No change | Proximity[4] | None | None |
| Tributary to Horsepen Run (W-OWA) | None | None[1] | No change | None | None | None |
| W-80 | None | Wetland Impact (0.1 acre) | No change | Wetland Impact (0.1 acre) | None | Wetland Impact (0.1 acre) |
| W-60 | None | Proximity[4] | Wetland Impact (0.1 acre) | Wetland Impact (0.1 acre) | None | None |
| W-61 | None | Proximity[4]<br>Floodplain[5]<br>EQC[5] | No change | Proximity[4]<br>Floodplain[5]<br>EQC[5] | None | None |
| W-FB/FBA/FF | None | Wetland Impact (0.4 acre)<br>Proximity[2,4] | No change | Wetland Impact (0.4 acre)<br>Proximity[4] | None | None |
| W-RIS | None | Wetland Impact (3.2 acre)[2] | No change | Wetland Impact (3.2 acre) | None | None |
| W-RISA | None | Wetland Impact (0.1 acre)[3] | No change | Wetland Impact (0.1 acre) | None | None |

| Wetland System | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| W-MMMA | None | Wetland Impact (0.2 acre) | No change | Wetland Impact (0.2 acre) | None | None |
| W-MMMB | None | Wetland Impact (0.1 acre) | No change | Wetland Impact (0.1 acre) | None | None |
| W-MMCI/MMD | None | Wetland Impact (0.1 acre) | No change | Wetland Impact (0.1 acre) | None | None |
| W-MMMG | None | Wetland Impact (0.3 acre) | No change | Wetland Impact (0.3 acre) | None | None |
| Unnamed Perennial Stream (W-26) | None | Proximity[4] | No change | Proximity[4] | None | None |
| Broad Run (W-25) | None | Floodplain[5]<br>RSCOD | No change | Floodplain[5]<br>RSCOD | None | None |
| W-50 | None | None | Wetland Impact: (0.1 acre)<br>Stream Impact (25 linear feet) | Wetland Impact (0. 1 acre)<br>Stream Impact (25 linear feet) | None | None |
| W-51 | None | Wetland Impact (0.5 acre)<br>Stream Impact (96 linear feet) | Wetland Impact (0.3 acre less impacted)<br>Stream Impact (124 linear additional feet impacted) | Wetland Impact (0.2 acre)<br>Stream Impact (220 linear feet) | None | None |

CBPA – Chesapeake Bay Preservation Areas

EQC – Environmental Quality Corridors

RSCOD – River and Stream Corridor Overlay District

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of further agency coordination and refinement of the evaluation methodology. .

[2] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of further coordination with USACE. USACE asked that the conversion of forested wetland to emergent wetland after construction of the aerial lead to S&I Yard 15 be considered a permanent impact and mitigated at a 1:1 ratio.

[3] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of the completion of Jurisdictional Determination mapping by MWAA after the Draft EIS was published.

[4] Proximity to construction could alter the hydrology and/or function of water resources.

[5] Potential effect to 100-Year Floodplain, however, no increase in floodplain elevation of more than one foot is anticipated.

[6] Minimal effect, use of BMPs assumed/required.

#### 4.2.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those discussed in the Draft EIS. No project-related impacts to water resources are anticipated from this alternative.

#### 4.2.1.2 Proposed Locally Preferred Alternative

The potential long-term effects to water resources from the proposed LPA and LPA Phase 1 are described below.

### A. Proposed Full LPA

As shown in Table 4.2-1, the effects associated with the proposed LPA would be similar to those described in the Draft EIS with the following exceptions:

- The reconfiguration of Route 28 Station would affect approximately 0.1 acres of wetland W-60.
- The construction of the maintenance access roadway for relocated station B-8 would affect approximately 0.01 acres of wetland W-50 and 25 linear feet of an unnamed tributary to Broad Run.
- The reconfiguration of Route 772 Station would affect approximately 0.2 acres of wetland W-51 and 220 linear feet of an unnamed tributary to Broad Run.

The total acreage of wetlands impacted under the proposed LPA would be approximately 4.9 acres. In addition, a total of approximately 245 linear feet of stream impacts would also occur.

### B. Proposed LPA Phase 1

Fewer effects to water resources would occur as a result of the proposed LPA Phase 1 in comparison to the proposed LPA as shown in Table 4.2-1. Under proposed LPA Phase 1 in its opening year, no wetlands, floodplains, or streams would be directly affected. Only proximity effects (minor changes in hydrology and or water quality) would occur.

If the full LPA were not implemented by 2025, then approximately 0.1 acres of Wetland W-80 would be affected near the Herndon-Monroe Park-and-Ride to accommodate an expansion of the parking capacity.

## 4.2.2 CONSTRUCTION EFFECTS

The construction effects on water resources that would result from the implementation of the proposed LPA would be similar to and include those documented in Section 4.2.5 of the Draft EIS for the Metrorail Alternative (T6/Y15) with the exception of the following:

- W-60 would be temporarily affected by restricting surface water flow while a structure is constructed under the entrance/exit of the facility.
- The surface and base flow of a tributary to Horsepen Run W-OWA would be temporarily affected.
- W-50 would be temporarily affected by restricting surface flow while an access road to an ancillary facility is being constructed.

The proposed LPA would cross several streams that have already been piped under the Dulles Connector Road. It is not anticipated that construction-related activities would have any negative effects on these resources. Some clearing of vegetation would be associated with construction of bridge extensions over Pimmit Run, Difficult Run, Broad Run, Stallion Branch, and Horsepen Run. However, new piers would be placed in previously disturbed areas, in-line with the piers of existing highway bridges. In addition, some construction activities would also take place near wetlands. The temporary construction effects to these water resources and the associated floodplains are anticipated to be minor.

For proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have minimal effects on water resources.

### 4.2.3 MITIGATION

Mitigation proposed for the proposed LPA and proposed LPA Phase 1 would be similar to the mitigation described in Section 4.2.6 of the Draft EIS. Available options include:

- BMPs listed in the *Virginia Erosion and Sediment Control Handbook* for stormwater management and erosion control;
- Preparation and submission of a sediment and erosion control plan for Virginia Department of Conservation and Recreation (VDCR), VDEQ, and local jurisdictions prior to any construction activity;
- Mitigation of the potential conversion of tributary W-51 to culvert or pipe, including stormwater retrofits within the watershed of the affected tributary, riparian buffers planted near the affected areas, or off-site mitigation;
- Design of any facilities located within floodplains in accordance with all federal, state, and local regulations;
- Coordination with local jurisdictions regarding mitigation for the nonconformity of any project elements within critical areas; and
- The use of steep-sided, narrow, linearly shaped, rip-rap lined, water detention (or "dry") basins, rather than traditional retention basins, to control hazardous wildlife within 10,000 feet of aircraft movement areas at Dulles Airport.

During a February 14, 2003 coordination meeting with USACE, DEQ and EPA, USACE representatives indicated that since impacts to streams would be minimal, all mitigation measures discussed in this section would be viable options. The final stream mitigation will be developed through permitting and coordination activities with USACE representatives.

Wetland mitigation would be required for the proposed LPA and proposed LPA Phase 1. The available requirements would be similar to the mitigation described in Section 4.2.6 of the Draft EIS and is presented in Table 4.2-2. Forested wetlands are mitigated on a two-to-one basis (creating two acres of wetlands for one acre of impact); while emergent wetlands are mitigated on a one-to-one basis. Wetland systems W-FB/FBA/FF, W-RISA, and W-RIS would be converted to emergent wetlands from forested wetlands after construction of aerial structures. In this case, the USACE would require a mitigation replacement ratio of one-to-one.

Figure 4.2-2 shows the location of potential wetland mitigation banks where mitigation for project impacts could take place. In discussions with the USACE, it was agreed that because "on-site" mitigation was not possible in the case of this project, wetland mitigation banks would be the best option to pursue. However, The six potential mitigation banks are described in more detail in the *Wetland Mitigation Options Report* (July 2003).

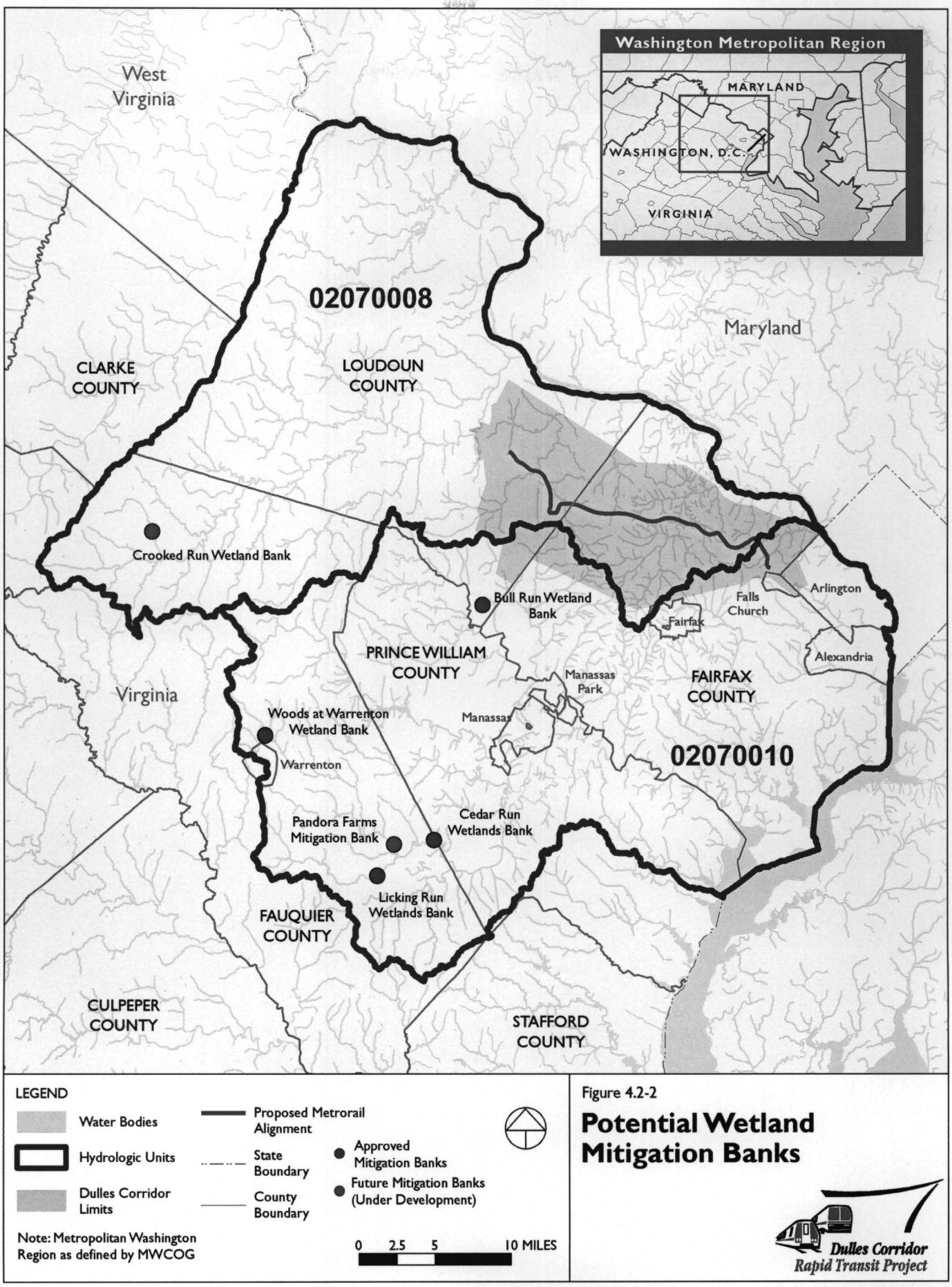



Figure 4.2-2

# Potential Wetland Mitigation Banks

Dulles Corridor Rapid Transit Project

**Table 4.2-2: Wetland Mitigation Requirements**

| Wetland System | Cowardin System Class | Wetland Impact (acres) | Replacement Ratio |
|---|---|---|---|
| W-80 | Palustrine Emergent Wetland | 0.1 | 1:1 |
| W-60 | Palustrine Forested Wetland | 0.1 | 2:1 |
| W-FB/FBA/FF[1] | Palustrine Forested Wetland | 0.4 | 1:1 |
| W-RIS[1] | Palustrine Forested Wetland | 3.2 | 1:1 |
| W-RISA[1] | Palustrine Forested Wetland | 0.1 | 1:1 |
| W-MMMA | Palustrine Emergent Wetland | 0.2 | 1:1 |
| W-MMMB | Palustrine Emergent Wetland | 0.1 | 1:1 |
| W-MMCI/MMD | Palustrine Emergent/Forested Wetland | 0.1 | 2:1 |
| W-MMMG | Palustrine Forested Wetland | 0.3 | 2:1 |
| W-51 | Palustrine Forested Wetland | 0.2 | 2:1 |
| W-50 | Palustrine Emergent Wetland | 0.1 | 1:1 |

[1]Permanent conversion from forested to emergent wetlands due to proposed aerial structure construction.

## 4.3 AQUATIC BIOTA AND HABITAT

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on aquatic biota and habitat. Aquatic biota are creatures and plants that live in water.

Through coordination with regulatory agencies and refinement of the evaluation methodology, changes in potential long-term impacts to aquatic habitat from those included in the Draft EIS are listed in the introduction to Section 4.2 of this document.

Section 4.3 of the Draft EIS provides a detailed discussion of the legal and regulatory context, analysis methodology, study area, and the condition of aquatic biota and habitat that exist along the corridor today.

### 4.3.1 LONG-TERM EFFECTS

This section presents the potential long-term impacts to aquatic biota and habitat associated with the proposed LPA design refinements, including proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

The impacts to the aquatic habitat are listed in Table 4.2-1.

#### 4.3.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those presented in the Draft EIS. There would be no project-related effects to aquatic biota and habitat from the alternative.

#### 4.3.1.2 Proposed Locally Preferred Alternative

The potential long-term effects of the proposed LPA and proposed LPA Phase 1 on aquatic biota and habitat are described below.

### A. Proposed Full LPA

The effects to aquatic habitat would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- The reconfiguration of Route 28 Station would affect approximately 0.1 acre of Wetland System W-60.
- The construction of the maintenance access roadway for relocated station B-8 would affect approximately 0.1 acre of palustrine forested wetland W-50 and 25 linear feet of an unnamed tributary to Broad Run.
- The reconfiguration of Route 772 Station would affect approximately 0.2 acre of W-51 and 220 linear feet of a tributary to Broad Run.

The proposed Route 772 Station parking facility and a proposed access road on the north side of the Dulles Greenway would permanently affect two tributary segments to Broad Run. The size and intermittent nature of the tributaries suggests minimal use by macroinvertebrates and other aquatic biota. Fish species are not likely to populate this habitat due to low flows year round. Because the tributaries would be piped under the improvements, minimal longer term effects to aquatic biota within the tributaries are anticipated. No effects to aquatic habitat or biota in Broad Run are anticipated.

### B. Proposed LPA Phase 1

The effects of the proposed LPA Phase 1 on aquatic biota and habitat would be similar to those documented in the Draft EIS for the Metrorail Alternative (T6/Y15). No effects to aquatic biota and habitat are anticipated from the proposed LPA Phase 1 in its opening year.

If the full LPA is not implemented by 2025, then an additional 0.1 acre of wetland W-80 would be affected near the Herndon-Monroe Park-and-Ride to accommodate an expansion of the parking capacity. The removal of this small amount of habitat would result in minimal effects to aquatic biota. Mitigation for this effect is presented in Section 4.3.3 of this document.

## 4.3.2 CONSTRUCTION EFFECTS

The potential short-term construction effects to aquatic biota and habitat that would result from the implementation of the proposed LPA would be similar to and include those documented in Section 4.3.5.3 of the Draft EIS for the Metrorail Alternative (T6/Y15) with the following exceptions:

- W-60 would be temporarily affected by restricting surface water flow while a structure is constructed under the entrance/exit of the facility.
- The surface and base flow of a tributary to Horsepen Run (W-OWA) would be temporarily affected.
- W-50 would be temporarily affected by restricting surface flow while an access road to an ancillary facility is being constructed.

Construction of the proposed LPA would not result in any long-term effects to aquatic biota and habitat. BMPs would be used to minimize construction effects.

Construction of proposed LPA Phase 1 would not be expected to result in any long-term effect to aquatic biota or their critical habitat.

### 4.3.3 MITIGATION

Mitigation proposed for the proposed LPA and proposed LPA Phase 1 would be similar to the measures described in Section 4.3.6 of the Draft EIS. Options that would serve to protect aquatic habitats and biota include:

- Erosion, sediment, and stormwater controls during construction would minimize any potential permanent effects on the hydrology or aquatic structures present in the streams and wetlands identified in the study area.
- Stormwater management BMPs would also be implemented, including minimizing the clearing of vegetation, prompt seeding to stabilize exposed areas, construction of stormwater basins, and installation of silt fences. Stormwater management regulations administered by VDCR require that there be no net increase in peak discharge above the predevelopment condition.
- BMPs for the handling, use, and disposal of hazardous materials and other measures (e.g., oil-water separators) would be used at S&I yards to ensure that releases of hazardous materials into aquatic habitats would not occur.

## 4.4 TERRESTRIAL BIOTA AND HABITAT

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative on terrestrial biota and habitat. Terrestrial habitat includes agricultural land, old fields, landscaped areas, and forest, while terrestrial biota refers to animals and plants that live on land.

Section 4.4 of the Draft EIS presents a discussion of the legal and regulatory context, analysis methodology, study area, and existing terrestrial biota and habitat in the corridor.

### 4.4.1 LONG-TERM EFFECTS

This section provides a description of the long-term impacts to terrestrial biota and habitat that would result from the implementation of the proposed LPA design refinements, including proposed LPA Phase 1.

#### 4.4.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those presented in the Draft EIS. There would be no project-related effects to terrestrial biota and habitat from this alternative.

#### 4.4.1.2 Proposed Locally Preferred Alternative

The potential long-term effects of the proposed LPA and LPA Phase 1 on terrestrial biota and habitat are described below.

### A. Proposed Full LPA

The effects to terrestrial biota and habitat would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- The improvements to the West Falls Church S&I Yard under proposed LPA Phase 1 would affect small strips of forested and landscaped habitat.
- The expansion of the Wiehle Avenue Station under proposed LPA Phase 1 would affect small strips of forested and landscaped habitat.
- The relocation of tie-breaker station B-2 would affect minimal amounts of old-field habitat.
- The relocation of traction power substation TP-19 would affect minimal amounts of old-field habitat.
- The relocation of tie-breaker station B-8 would affect minimal amounts of old-field habitat.
- The addition of station areas and addition of park-and-ride facilities on both sides of the Dulles Greenway (rather than one side or the other at Route 772) would result in additional old-field and forest habitat being removed.

The habitat that would be removed for the proposed LPA would include very small strips or areas of habitat located in developed areas and is habitat of limited importance for terrestrial wildlife.

At Route 772, the additional effects are anticipated to be minor because similar additional areas of old-field are located nearby and the forest habitat affected is along the outer edge of the forested area. Negative effects to the terrestrial wildlife that are likely to use this area are not anticipated.

### B. Proposed LPA Phase 1

The effects to terrestrial biota and habitat would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- The improvements to the West Falls Church S&I Yard under proposed LPA Phase 1 would affect small buffer strips of forested habitat.
- The development of the Wiehle Avenue Station under proposed LPA Phase 1 would affect small buffer strips of forested habitat.
- The relocation of tie-breaker station B-2 would affect minimal amounts of old-field habitat.
- The park-and-ride capacity at Route 606 would be increased incrementally (initially below the levels of the proposed LPA) affecting a smaller amount of forest habitat.

The habitat that would be removed for the proposed LPA Phase 1 includes very small strips or areas of habitat located in developed areas and is habitat of limited importance for terrestrial wildlife.

If the LPA is not implemented in its entirety by 2025, then an additional small amount of forested land would be removed at Route 606. Negative effects to the terrestrial wildlife that are likely to use this area are not anticipated.

## 4.4.2 CONSTRUCTION EFFECTS

Potential short-term construction effects to terrestrial biota and habitat that would result from the implementation of the proposed LPA would be similar to and include those documented in Section 4.4.5 of the

Draft EIS for the Metrorail Alternative (T6/Y15), with the exception of the forested and/or old-field habitat located at the following proposed temporary contractor work areas shown previously in Figure 2.2-3.

- Route 7 Interchange with the DIAAH;
- East of the Washington and Old Dominion (W&OD) Trail and the DIAAH; and
- West of Autopilot Drive and south of Navigation Road.

Construction of the proposed LPA would not result in any long-term effects to terrestrial biota and habitat. BMPs would be used to minimize construction effects.

Construction of proposed LPA Phase 1 would also not be expected to result in any long-term effect to terrestrial biota and habitat.

### 4.4.3 MITIGATION

Available mitigation measures for impacts to terrestrial biota and habitat under the proposed LPA would be similar to those documented in Section 4.4.6 of the Draft EIS.

At Dulles Airport, a portion of the proposed LPA would extend through a deciduous forest for a short distance before crossing Horsepen Run and entering the median of the Dulles Greenway. This would create a new opening within a contiguous forest patch of about 100 acres. Although the Commonwealth does not require mitigation of impacts to upland habitats such as forests, the width of the area cleared could be minimized.

No mitigation is proposed for the effects of proposed LPA Phase 1 on terrestrial biota and habitat.

## 4.5 RARE, THREATENED, AND ENDANGERED SPECIES

This section describes the rare, threatened, and endangered (RTE) species that could be affected by the design refinements to the proposed proposed LPA and its construction phase. Changes in evaluation methodology and existing conditions since the Draft EIS are discussed below, followed by an evaluation of long-term effects, construction effects and mitigation.

Correspondence received from VDCR after the publication of the Draft EIS requested that additional field survey of S&I Yard Site 15, located on Dulles Airport property, be conducted. The concern expressed by VDCR was that our previous survey might have missed the flowering periods for some of the rare diabase glade plants that could potentially be present.

The additional field survey was conducted in August 2002. This survey confirmed the results of the April 2002 survey (documented in the Draft EIS) that no specimens of the targeted rare plants are present at S&I Yard 15. A study conducted by MWAA in July 2002 to document the presence of the rare plants on airport property was also reviewed. That report also demonstrated that none of the rare plants associated with the diabase glade habitat are present on airport property. The results of the MWAA survey and the one conducted in August were forwarded to VDCR for their review in August 2003.

The legal and regulatory context for RTE species remains unchanged and is described in Section 4.5 of the Draft EIS.

### 4.5.1 LONG-TERM EFFCTS

Potential long-term effects of the proposed LPA would be similar to those described in the Draft EIS for RTE species. Effects of the proposed LPA and proposed LPA Phase 1 are described below.

#### 4.5.1.1 No Build Alternative

The effects of the No Build Alternative would be similar to those described in the Draft EIS. There would be no project-related effects to RTE species from this alternative.

#### 4.5.1.2 Proposed Locally Preferred Alternative

The potential long-term effects to RTE species from the proposed LPA and LPA Phase 1 are described below.

**A. Proposed Full LPA**

The effects to RTE species associated with the proposed LPA would be similar to and would include those documented in the Draft EIS for the Metrorail Alternative (T6/Y15).

**B. Proposed LPA Phase 1**

The effects to RTE species associated with the proposed LPA are similar to and would include those documented in the Draft EIS for the Metrorail Alternative (T6/Y15). No effects to RTE species or their habitats would occur as a result of the proposed LPA Phase 1 or the premium bus service that would operate in the corridor west of the Wiehle Avenue Station.

If the full LPA is not implemented by 2025, no additional effects to RTE species would occur.

### 4.5.2 CONSTRUCTION EFFECTS

The potential short-term construction effects to RTE species that would result from the implementation of the proposed LPA would be similar to and include those documented in Section 4.5.5 of the Draft EIS for the Metrorail Alternative (T6/Y15). Construction of the proposed LPA would not result in any long-term effect to regulated RTE species or their critical habitat. BMPs for engineering, storm water management, and sediment and erosion control would be used during the construction of the Metrorail spans and alignment along the median of the DIAAH to avoid water quality impacts to Difficult Run. This would minimize potential negative construction-related effects on the wood turtle.

Construction of proposed LPA Phase 1 would also not be expected to result in any long-term effect to regulated RTE species or their critical habitat.

### 4.5.3 MITIGATION

As documented in the Draft EIS for the Metrorail Alternative (T6/Y15), because there are no major effects to RTE species under the proposed LPA or proposed LPA Phase 1, no mitigation is proposed.

## 4.6 AIR QUALITY

This section presents the potential long-term and construction effects of the proposed LPA, LPA Phase 1, and No Build Alternative on air quality.

Since the publication of the Draft EIS, the opening year for the proposed LPA has changed from 2010 to 2015. The addition of the proposed LPA Phase 1 (with its associated opening year) required further air quality analysis which is documented in the following sections.

Additional information regarding the analysis of air quality is provided in the *Air Quality Technical Report* (June 2002). If warranted, mitigation measures are presented for the effects that would be over and above those described for air quality in the Draft EIS. A detailed discussion of the statutes and regulations affecting air quality, analysis methodology, study area definition, and existing air quality in the corridor is similar to and has not changed from that provided in Section 4.6 of the Draft EIS.

The study area is within the area covered by the Metropolitan Washington Council of Governments (MWCOG), which has responsibilities related to transportation and air quality planning in the Washington Metropolitan Region including the multi-jurisdictional Washington, D.C.-MD-VA nonattainment area. MWCOG develops the region's transportation and air quality strategies as well as specific plans and programs to reduce emissions. The CLRP and TIP have been found to be in conformity with the State Implementation Plan (SIP) for the Washington, D.C.-MD-VA Nonattainment Area.

## 4.6.1 LONG-TERM EFFECTS

This section presents the potential long-term air quality impacts that could result from the implementation of the proposed LPA design refinements and proposed LPA Phase 1. Because the project opening years have changed since the publication of the Draft EIS, a revised air quality analysis was conducted for the No Build Alternative (2009), proposed LPA Phase 1 (2009 and 2025), and the proposed LPA (2025).

### 4.6.1.1 No Build Alternative

The effects for the 2025 No Build Alternative would be the same as those documented in Section 4.6.4.1 of the Draft EIS.

For the 2009 No Build Alternative, the maximum predicted one- and eight-hour carbon monoxide (CO) concentrations would occur at Site 7, the Route 7/Tyco Road/Westwood Center Drive intersection, and would be 9.8 and 5.7 parts per million (ppm), respectively. Predicted one-hour CO concentrations at the remaining sites would range from 6.6 ppm to 9.6 ppm, while the predicted eight-hour concentrations at these sites would range from 3.4 ppm to 5.5 ppm.

For the 2015 No Build Alternative, the maximum predicted one- and eight-hour carbon monoxide (CO) concentrations occurred at Site 6, the Route 7/Spring Hill Road intersection, and were 9.1 ppm and 5.2 ppm, respectively. Predicted one-hour CO concentrations at the remaining sites ranged from 7.8 ppm to 8.8 ppm, while the predicted eight-hour concentrations at these sites ranged from 4.3 ppm to 5.0 ppm.

Tables 4.6-1 and 4.6-2, respectively, present the predicted one-hour and eight-hour CO concentrations for the No Build Alternative. All predicted concentrations include background levels of 6.0 ppm for one hour and 3.0 ppm for eight hours to account for sources of CO other than the traffic at the modeling sites. No maximum CO concentrations for the No Build Alternative are predicted to exceed National Ambient Air Quality Standards (NAAQS).

**Table 4.6-1: Maximum Predicted 1-Hour CO Concentrations (in ppm) for No Build Alternative[1]**

| I.D. No. | Intersection | No Build Alternative | |
|---|---|---|---|
| | | 2009 | 2025 |
| Tysons Corner Area | | | |
| 1 | Route 123/Colshire Drive | 8.5 | 7.7 |
| 2 | Route 123/Tysons Boulevard | 8.8 | 8.4 |
| 3 | Route 123/International Drive | 9.4 | 8.4 |
| 4 | Westpark Drive/International Drive | 9.1 | 8.1 |
| 5 | Route 7/Westpark Drive | 8.8 | 8.4 |
| 6 | Route 7/Spring Hill Road | 9.0 | 8.7 |
| 7 | Route 7/Tyco Road/Westwood Center Drive | 9.8 | 8.5 |
| Mid Corridor Area | | | |
| 8 | Wiehle Avenue/Sunset Hills Road | 9.0 | 8.4 |
| 9 | Reston Parkway/Sunset Hills Road | 9.4 | 8.4 |
| 10 | Reston Parkway/Dulles Toll Road – EB Ramps | 8.5 | 7.9 |
| 11 | Reston Parkway/Sunrise Valley Drive | 9.6 | 8.8 |
| 12 | Sunrise Valley Drive/Fairfax County Parkway | 9.3 | 8.6 |
| 13 | Monroe Street/Sunrise Valley Drive | 8.5 | 8.0 |
| 14 | Centreville Road/Worldgate Drive | 8.6 | 8.3 |
| Loudoun County | | | |
| 15 | Route 606 Park-and-Ride Facility | 6.6 | 6.6 |

1 NAAQS is 35 ppm for 1-hour CO concentrations

**Table 4.6-2: Maximum Predicted 8-Hour CO Concentrations (in ppm) for No Build Alternative[1]**

| I.D. No. | Intersection | No Build Alternative | |
|---|---|---|---|
| | | 2009 | 2025 |
| Tysons Corner Area | | | |
| 1 | Route 123/Colshire Drive | 4.8 | 4.2 |
| 2 | Route 123/Tysons Boulevard | 4.7 | 4.4 |
| 3 | Route 123/International Drive | 5.4 | 4.7 |
| 4 | Westpark Drive/International Drive | 5.2 | 4.5 |
| 5 | Route 7/Westpark Drive | 5.0 | 4.7 |
| 6 | Route 7/Spring Hill Road | 5.1 | 4.9 |
| 7 | Route 7/Tyco Road/Westwood Center Drive | 5.7 | 4.8 |
| Mid Corridor Area | | | |
| 8 | Wiehle Avenue/Sunset Hills Road | 5.1 | 4.7 |
| 9 | Reston Parkway/Sunset Hills Road | 5.4 | 4.7 |
| 10 | Reston Parkway/Dulles Toll Road – EB Ramps | 4.8 | 4.3 |
| 11 | Reston Parkway/Sunrise Valley Drive | 5.5 | 5.0 |
| 12 | Sunrise Valley Drive/Fairfax County Parkway | 5.3 | 4.8 |
| 13 | Monroe Street/Sunrise Valley Drive | 4.8 | 4.4 |
| 14 | Centreville Road/Worldgate Drive | 4.9 | 4.6 |
| Loudoun County | | | |
| 15 | Route 606 Park-and-Ride Facility | 3.4 | 3.4 |

1 NAAQS is 9 ppm for 8-hour concentrations

### 4.6.1.2 Proposed Locally Preferred Alternative

This section presents the potential long-term effects of the proposed LPA and proposed LPA Phase 1 on air quality. Table 4.6-3 presents the maximum predicted one-hour CO concentrations for the proposed LPA, including proposed LPA Phase 1. Table 4.6-4 presents the maximum predicted eight-hour CO concentrations for the proposed full LPA and proposed LPA Phase 1. All predicted concentrations include backgroud levels of 6.0 ppm for one hour and 3.0 ppm for eight hours to account for sources of CO other than the traffic at the modeling sites. Neither the proposed LPA nor LPA Phase 1 predicted concentrations would exceed NAAQS.

#### A. Proposed Full LPA

The effects of the proposed LPA in 2025 would be the same as those reported in Section 4.6.4.3 of Draft EIS. For the opening year of the full LPA in 2015, the maximum predicted one- and eight-hour CO concentrations occurred at Site 15, the Route 606 park-and-ride facility, and are 11.4 ppm and 6.8 ppm, respectively. Predicted one-hour CO concentrations at the remaining sites ranged from 7.9 ppm to 9.0 ppm, while eight-hour CO concentrations at the remaining sites ranged from 4.3 ppm to 5.1 ppm.

#### B. Proposed LPA Phase 1

Under proposed LPA Phase 1 in 2009, the maximum predicted one- and eight-hour CO concentrations occurred at Site 7, the Route 7/Tyco Road/Westwood Center Drive intersection, and were 9.7 ppm and 5.6 ppm, respectively. Predicted one-hour CO concentrations at the remaining sites ranged from 6.6 ppm to 9.6 ppm, while predicted eight-hour concentrations at these sites ranged from 3.4 ppm to 5.5 ppm.

If the proposed LPA is not implemented in its entirety by 2025, the air quality effects would be similar to those described for proposed LPA Phase 1 in 2025, shown in Table 4.6.3.

**Table 4.6-3: Maximum Predicted 1-Hour CO Concentrations (in ppm) for the LPA[1]**

| I.D. No. | Intersection | LPA Phase 1 | | LPA |
|---|---|---|---|---|
| | | 2009 | 2025 | 2025 |
| Tysons Corner | | | | |
| 1 | Route 123/Colshire Drive | 8.8 | 7.8 | 7.8 |
| 2 | Route 123/Tysons Boulevard | 8.7 | 8.3 | 8.3 |
| 3 | Route 123/International Drive | 9.4 | 8.0 | 8.0 |
| 4 | Westpark Drive/International Drive | 9.1 | 8.1 | 8.1 |
| 5 | Route 7/Westpark Drive | 8.6 | 8.3 | 8.3 |
| 6 | Route 7/Spring Hill Road | 8.9 | 8.3 | 8.3 |
| 7 | Route 7/Tyco Road / Westwood Center Drive | 9.7 | 8.4 | 8.4 |
| Mid Corridor | | | | |
| 8 | Wiehle Avenue/Sunset Hills Road | 9.0 | 8.5 | 8.5 |
| 9 | Reston Parkway/Sunset Hills Road | 9.4 | 8.5 | 8.5 |
| 10 | Reston Parkway/Dulles Toll Road – EB Ramps | 8.5 | 8.0 | 8.0 |
| 11 | Reston Parkway/Sunrise Valley Drive | 9.6 | 8.8 | 8.8 |
| 12 | Sunrise Valley Drive/Fairfax County Parkway | 9.3 | 8.9 | 8.9 |
| 13 | Monroe Street/Sunrise Valley Drive | 8.5 | 8.4 | 8.4 |
| 14 | Centreville Road/Worldgate Drive | 8.6 | 8.4 | 8.4 |

| I.D. No. | Intersection | LPA Phase 1 | | LPA |
|---|---|---|---|---|
| | | 2009 | 2025 | 2025 |
| Loudoun County | | | | |
| 15 | Route 606 Park-and-Ride Facility | 6.6 | 11.2 | 11.2 |

1 NAAQS is 35 ppm for 1-hour CO concentrations

**Table 4.6-4: Maximum Predicted 8-Hour CO Concentrations (in ppm) for the LPA[1]**

| I.D. No. | Intersection | LPA Phase 1 | | LPA |
|---|---|---|---|---|
| | | 2009 | 2025 | 2025 |
| Tysons Corner | | | | |
| 1 | Route 123/Colshire Drive | 5.0 | 4.3 | 4.3 |
| 2 | Route 123/Tysons Boulevard | 4.6 | 4.4 | 4.4 |
| 3 | Route 123/International Drive | 5.4 | 4.4 | 4.4 |
| 4 | Westpark Drive/International Drive | 5.2 | 4.5 | 4.5 |
| 5 | Route 7/Westpark Drive | 4.8 | 4.6 | 4.6 |
| 6 | Route 7/Spring Hill Road | 5.0 | 4.6 | 4.6 |
| 7 | Route 7/Tyco Road/Westwood Center Drive | 5.6 | 4.7 | 4.7 |
| Mid Corridor | | | | |
| 8 | Wiehle Avenue/Sunset Hills Road | 5.1 | 4.8 | 4.8 |
| 9 | Reston Parkway/Sunset Hills Road | 5.4 | 4.8 | 4.8 |
| 10 | Reston Parkway/Dulles Toll Road – EB Ramps | 4.8 | 4.4 | 4.4 |
| 11 | Reston Parkway/Sunrise Valley Drive | 5.5 | 5.0 | 5.0 |
| 12 | Sunrise Valley Drive/Fairfax County Parkway | 5.3 | 5.0 | 5.0 |
| 13 | Monroe Street/Sunrise Valley Drive | 4.8 | 4.7 | 4.7 |
| 14 | Centreville Road/Worldgate Drive | 4.8 | 4.7 | 4.7 |
| Loudoun County | | | | |
| 15 | Route 606 Park-and-Ride Facility | 3.4 | 6.6 | 6.6 |

1 NAAQS is 9 ppm for 8-hour CO concentrations

### 4.6.2 CONSTRUCTION IMPACTS

The effects to air quality that would result from the construction of the proposed LPA would be similar to those documented in Section 4.6.5 of the Draft EIS.

Potential short-term impacts from construction include direct emissions from construction equipment and trucks, increased emissions from motor vehicles on the streets due to disruption of traffic flow, and fugitive dust emissions. These impacts would be temporary, and would affect only the immediate vicinity of the construction sites and their access routes. Emissions from project-related construction equipment are expected to be insignificant with respect to other regional sources and compliant with the NAAQS.

Roadway traffic disruption can increase motor vehicle exhaust emissions. Fugitive dust from construction activities would most likely be a problem during periods of intense activity and would be accentuated by windy and/or dry weather conditions.

The proposed LPA would involve construction activities and equipment to support construction of railbed, tracks, and signals in the median of the Dulles Connector Road and the DIAAH; Metrorail connections to the West Falls Church S&I Yard; traction power substations and tie-breaker stations; the elevated structures in Tysons Corner; and underground facilities in Tysons Corner and at Dulles Airport.

The greater the linear length of track structures, the greater the potential for construction air quality impacts. Air quality effects would be minimal near tunnel segments and underground stations, but the potential for localized impacts would increase at the tunnel portals and station access shafts where equipment must enter and excavate must be removed.

For proposed LPA Phase 1, construction effects would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have minimal effects on air quality.

### 4.6.3 MITIGATION

Proposed mitigation measures for the proposed LPA and proposed LPA Phase 1 would be similar to those documented in Section 4.6.6 of the Draft EIS. These include: measures to minimize direct emissions from construction equipment, such as the use of low-emissions equipment (EPA Tier 2 compliant, alternative-fueled, or retrofitted with emissions controls), assurance of proper operation and maintenance of equipment, and prohibition of excessive idling of engines; and traffic management techniques during construction to mitigate emissions from increased traffic congestion due to lane closures and detours, including the development of site-specific traffic management plans, temporary signage and other traffic controls, designated staging areas, worker parking lots, and prohibition of construction vehicle travel during peak traffic periods. Finally, potential fugitive dust impacts would be mitigated through "good housekeeping" practices, such as water sprays during demolition; wetting, paving, landscaping, or chemically treating exposed earth areas; covering dust-producing materials during transport; limiting dust-producing construction activities during high wind conditions; and providing street sweeping and tire washes for trucks leaving the site. Such practices would meet VDEQ regulations for fugitive dust and emissions as outlined in VDEQ regulation 9 VAC 5-50-90.

## 4.7 NOISE

This section presents the potential long-term and construction effects of the proposed LPA, LPA Phase 1, and No Build Alternative from noise.

A detailed discussion of the human perception of noise, federal, state and local impact evaluation criteria, analysis methodology and assumptions, study area definition, and ambient and existing noise levels in the corridor is provided in Section 4.7 of the Draft EIS. This information has not changed. Additional information regarding study area noise is provided in the *Noise and Vibration Technical Report* (June 2002).

### 4.7.1 LONG-TERM EFFECTS

Tables 4.7-1 and 4.7-2 provide a summary of the noise impacts for the No Build Alternative, the Metrorail Alternative (T6/Y15), and those associated with the design refinements to the proposed LPA, and LPA Phase 1 with and without proposed mitigation measures. Mitigation measures, including the enclosure of a loop track near the West Falls Church S&I Yard and the use of parapet barriers on aerial track structures for proposed LPA Phase 1 could reduce noise levels at all but one of the impacted receptors identified in Tables 4.7-1 and 4.7-2 to

levels below the FTA and WMATA impact criteria. For the single remaining impacted receptor, further analysis during the Final EIS process will be conducted to identify if cost-effective mitigation measures are available to reduce noise levels below FTA impact criteria.

**Table 4.7-1: Noise Impact Summary According to FTA Criteria**

| Sites of Potential Concern | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Category 2 | | | | | | |
| Impact (Without Mitigation/ With Mitigation) | 0/0 | 116/1 | 0 | 116/1 | 116/1 | 116/1 |
| Severe Impact (Without Mitigation/ With Mitigation) | 0/0 | 3/0 | 0 | 3/0 | 3/0 | 3/0 |
| Total (Without Mitigation/ With Mitigation) | 0/0 | 119/1 | 0 | 119/1 | 119/1 | 119/1 |
| Category 3 | | | | | | |
| Impact (Without Mitigation/ With Mitigation) | 0/0 | 2/0 | 0 | 2/0 | 2/0 | 2/0 |
| Severe Impact (Without Mitigation/ With Mitigation) | 0/0 | 0/0 | 0 | 0/0 | 0/0 | 0/0 |
| Total (Without Mitigation/ With Mitigation) | 0/0 | 2/0 | 0 | 2/0 | 2/0 | 2/0 |

[1] Includes only residential and commercial receptors.

**Table 4.7-2: Noise Impact Summary According to WMATA Criteria**

| Noise | Impact Criteria | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|---|
| | | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Number of Impacts Based on WMATA Criteria (Without Mitigation/ With Mitigation) | Residential | 0/0 | 15/0 | 0 | 15/0 | 15/0 | 15/0 |
| | Commercial | 0/0 | 2/0 | 0 | 2/0 | 2/0 | 2/0 |
| | Other | 0/0 | 0/0 | 0 | 0/0 | 0/0 | 0/0 |
| | Total | 0/0 | 17/0 | 0 | 17/0 | 17/0 | 17/0 |

### 4.7.1.1 No Build Alternative

The effects of the No Build Alternative are similar to those described in the Draft EIS. No project-related noise impacts are associated with this alternative.

#### 4.7.1.2 Proposed Locally Preferred Alternative

The potential long-term noise effects from the proposed LPA and proposed LPA Phase 1 are described below.

### A. Proposed Full LPA

Refinements to the proposed LPA that have occurred since the publication of the Draft EIS and are considered in the noise analysis include:

- Changes in land use – approximately 200 new receptors have been added to the analysis to account for new development constructed or planned within the corridor;
- Changes in storage yards – additional storage tracks are proposed for the West Falls Church S&I Yard in order to increase storage capacity from 26 rail vehicles under the Draft EIS Metrorail Alternative (T6/Y15) to 42 rail vehicles for the proposed LPA;
- Changes in vertical alignment – the vertical alignment near the West Falls Church S&I Yard was lowered from five to 20 feet depending on location;
- Changes in station location and curve radius – the Tysons East Station was moved approximately 100 feet to the north and the radius of the associated curve was increased from 800 feet to over 1,000 feet;
- Change in tunnel portal location – the west tunnel portal at Dulles Airport was moved approximately 350 feet to the north;
- Changes in park-and-ride lots – at Wiehle Avenue the park-and-ride would have 2,300 spaces and up to 16 bus bays;
- Changes in pocket tracks – a pocket track was eliminated at Tysons East Station; and
- Changes in speeds – speeds have been adjusted both up and down in different locations based on revised operational analysis.

Because most of these changes are expected to contribute to a decrease in the overall noise level at receptor locations, detailed recalculation of the over 4,100 receptors in the Dulles Corridor was not conducted. Instead the impacts of these changes are described qualitatively.

The effects associated with the proposed LPA would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15) with the exception of effects associated with the new yard lead at the West Falls Church S&I Yard and at one of the historic resources identified in the Dulles Corridor. Impacted receptors would be generally located as follows, throughout the project corridor:

- 12 surrounding the West Falls Church S&I Yard;
- 72 between the West Falls Church S&I Yard and Tysons Corner;
- 34 in Tysons Corner; and
- 3 between Tysons Corner and Wiehle Avenue.

In general, FTA criteria impacts occur as a result of adding additional project–related noise to areas of high existing noise. The main sources of existing noise levels in the project corridor are the adjacent high capacity roadways. Proposed mitigation measures will not reduce noise from those roadways, but will reduce the additional noise anticipated from proposed Metrorail operations.

Wheel squeal from a 300-foot radius curve along a new yard lead at the West Falls Church S&I Yard is not expected to exceed the FTA or WMATA noise criteria at nearby residences due to loop track enclosures that would be constructed to prevent wheel squeal from reaching the nearby community. With the proposed addition of storage track in the northeast corner of the yard closer to the neighboring community, noise from

idling Metrorail cars is expected to increase. However, the overall noise level at the nearby receptors is expected to decrease by approximately 7 A-weighted decibels (dBA) with the combined effects of the additional storage tracks and the proposed loop track enclosures.

Historic receptor H4 (Ash Grove Historic Site) was predicted to exceed Federal Transit Administration (FTA) Land Use Category 2 criteria noise levels due to Metrorail passbys. Overall noise levels at this site are expected to decrease with the use of a parapet barrier. Consequently, none of the project noise levels under the proposed LPA are predicted to exceed the FTA Land Use Categories 1, 2, or 3 criteria at historic resources in the study area.

### B. Proposed LPA Phase 1

The effects associated with proposed LPA Phase 1 would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15) with the exception of effects detailed above for the proposed LPA. All impacted receptors in the Draft EIS were located at, or east of the proposed Metrorail terminus at Wiehle Avenue Station, hence, the number of impacts remains the same. No other changes in noise effects are anticipated.

Wheel squeal from a 300-foot radius curve along a new yard lead at the West Falls Church S&I Yard is not expected to exceed the WMATA noise criteria at nearby residences due to loop track enclosures that would be constructed to prevent wheel squeal from reaching the nearby community. With the proposed addition of storage track in the northeast corner of the yard closer to the neighboring community, noise from idling Metrorail cars is expected to increase. However, the overall noise level at the nearby receptors is expected to decrease by approximately 7 A-weighted decibels (dBA) with the combined effects of the additional storage tracks and the proposed loop track enclosures.

If the proposed LPA is not implemented in its entirety by 2025, the noise impacts would be similar to those shown for the proposed LPA Phase 1 in Tables 4.7-1 and 4.7-2.

## 4.7.2 CONSTRUCTION EFFECTS

Noise levels from construction activities along the Dulles Corridor, although temporary, could create a nuisance condition at nearby sensitive receptors. The short-term noise effects that would result from construction of the proposed LPA would be similar to and include those described in Section 4.7.6 of the Draft EIS for the Metrorail Alternative (T6/Y15).

For the proposed LPA, track-laying construction activities would occur from the Orange Line Connection to Dulles Airport and Loudoun County. Construction activities would also include bridges, parking garages, and S&I Yards. Construction activities are predicted to exceed the FTA daytime noise limits at up to four residences. Construction activities for the proposed LPA are predicted to exceed the WMATA daytime noise limits at up to five locations.

For proposed LPA Phase 1, the noise effects of construction activities would be similar to those described for the proposed LPA, because all affected receptors are located east of Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have limited noise effects.

### 4.7.3 MITIGATION

Potential mitigation measures would be similar to those described in Sections 4.7.7.1 and 4.7.7.3 of the Draft EIS. These include the use of noise barriers with an absorptive coating to eliminate the potential for noise reflections; application of petroleum lubricants to the track surface to minimize the overall impact on nearby noise-sensitive residences; and a detailed investigation during final design to determine barrier insertion losses based on wheel squeal spectral data (i.e., octave-band data) rather than the A-weighted analysis using the FTA methodology.

Additional noise control measures would be employed during construction, including temporary noise barriers erected between noisy activities and noise-sensitive receptors; the potential use of sonic/vibratory pile-drivers rather than impact pile-driving near noise-sensitive receptors; and re-routing construction traffic along roadways that minimize noise impacts at nearby noise-sensitive receptors.

In addition to the mitigation measures discussed in the Draft EIS, enclosure of the loops tracks and new yard lead at the West Falls Church S&I Yard has been proposed. The enclosures would reduce wheel squeal for all nearby receptors and all adjacent receptors would be below FTA and WMATA impact criteria.

## 4.8 VIBRATION

This section presents the potential long-term and construction effects of the proposed LPA, proposed LPA Phase 1, and No Build Alternative from vibration. A detailed discussion of the human perception of vibration, federal, state and local impact evaluation criteria, analysis methodology and assumptions, study area definition, and existing vibration levels in the corridor is provided in Section 4.8 of the Draft EIS. This information has not changed. Additional information regarding study area noise is provided in the *Noise and Vibration Technical Report* (June 2002).

**Table 4.8-1: Vibration Impacts Summary**

| Criteria | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Effects | Metrorail Alternative (T6/Y15) Effects | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Federal Criteria | None | Up to 16 | No change | Up to 16 | Up to 16 | Up to 16 |
| WMATA Criteria | None | Up to 22 | No change | Up to 22 | Up to 22 | Up to 22 |

### 4.8.1 LONG-TERM EFFECTS

Table 4.8-1 provides a summary of the vibration impacts, including proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

#### 4.8.1.1 No Build Alternative

The effects associated with the No Build Alternative are similar to those described in the Draft EIS. No project-related vibration impacts are expected under this action.

### 4.8.1.2 Proposed Locally Preferred Alternative

The potential vibration effects from the proposed LPA and LPA Phase 1 are described below.

#### A. Proposed Full LPA

Refinements to the proposed LPA that have occurred and are considered in the vibration analysis include only the change in vertical alignment near the West Falls Church S&I Yard (lowered from 5 to 20 feet depending on location).

The effects associated with the proposed LPA are similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The change in alignment elevation is expected to reduce overall vibration levels along the Dulles Connector Road. Further analysis of the impacts of switch locations will be conducted as part of the Final EIS process.

#### B. Proposed LPA Phase 1

The effects associated with the proposed LPA Phase 1 would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). Under proposed LPA Phase 1, Metrorail service would not extend past the Wiehle Avenue Station. The total number of vibration impacts is expected to be similar to those reported for the proposed LPA as there were no vibration impacts identified west of the Wiehle Avenue Station.

If the proposed LPA is not implemented in its entirety by 2025, the vibration effects would be similar to those described for the proposed LPA Phase 1 shown in Table 4.8-1.

### 4.8.2 CONSTRUCTION EFFECTS

Similar to noise, vibration levels from construction activities in the study area could also create a nuisance condition at nearby sensitive receptors. In addition to a nuisance condition, the potential for minor structural damage was also analyzed. The short-term vibration effects that would result from construction of the proposed LPA would be similar to and include those described in Section 4.8.6 of the Draft EIS for the Metrorail Alternative (T6/Y15).

Under the proposed LPA, passenger stations would be constructed to accommodate full Metrorail service in Fairfax County and Loudoun County at Dulles Airport. Additionally, both at-grade and aerial track construction would occur from the Orange Line Connection through Loudoun County.

Exceedances of the FTA vibration criteria are predicted at 34 residences during track construction. No exceedances of the FTA impact criteria at serene parks are predicted at any receptors in the study area. Likewise, all the predicted vibration levels from construction activities under the proposed LPA are well below the threshold for minor cosmetic damage of 95 decibels of vibration velocity.

Exceedances of the WMATA vibration criteria are predicted at up to ten residences during track laying. No exceedances of the WMATA damage criteria of 0.20 inches per second are predicted at any receptors in the study area.

For proposed LPA Phase 1, the vibration effects of construction activities would be similar to those described for the proposed LPA, because all affected receptors are located east of Wiehle Avenue Station. West of Wiehle Avenue Station, construction of facilities for premium bus service would have limited vibration effects.

### 4.8.3 MITIGATION

Proposed mitigation measures would be similar to those described in Sections 4.8.7.1 and 4.8.7.3 of the Draft EIS. These measures include operating limitations such as the use of vibration dampening materials such as ballast mats under each switch and strategic relocation of switches away from sensitive vibration receptors. Additional vibration control measures could be employed during construction, including alternative construction methods such as avoiding impact pile driving near vibration-sensitive receptors like residences, schools, and hospitals; the use of drilled piles or sonic/vibratory pile drivers whenever possible; re-routing truck traffic away from vibration-sensitive receptors; and using Best Available Control Technologies (BACT) to further limit excessive vibration.

## 4.9 HAZARDOUS AND CONTAMINATED MATERIALS

This section presents the potential for disturbing hazardous or contaminated materials during implementation of the proposed LPA and LPA Phase 1 of the Dulles Corridor Rapid Transit Project. Changes in existing conditions since the publication of the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects, and mitigation. For a detailed description of the analysis methodology, legal and regulatory context, and existing hazardous and contaminated materials sites within the corridor, please refer to Section 4.9 of the Draft EIS, the *Hazardous and Contaminated Materials Technical Report* (June 2002), and the *Phase 1 Environmental Site Assessment* (October 2003).

Twenty-eight sites were identified in the Draft EIS as potential sources of contamination or hazardous materials located within the predicted limits of disturbance of the Metrorail Alternative (T6/Y15). Since the publication of the Draft EIS and selection of the proposed LPA, additional site interviews, site visits, and VDEQ file reviews were conducted for each of these 28 sites. Based on this new information, 20 sites are no longer considered environmental sites of potential concern:

- Westgate Building (Site No. 16);
- Getronics (Site No. 26);
- Former Getronics (Site No. 32);
- MCI Telecommunications (Site No. 35);
- Goodyear Auto Service Center (Site No. 68);
- Best Western Westpark Hotel (Site No. 71);
- Stohlman VW and Subaru (Site No. 74);
- Rosenthal Nissan, Inc. (Site No. 78);
- Moore Cadillac Co. (Site No. 91);
- Bodyworks Bodyshop (Site No. 94);
- Koons Toyota (Site No. 95);
- Peacock Buick (Site No. 97);
- Sheraton Tysons Corner (104);
- Wiehle Avenue Park-and Ride (Site No. 132);
- Dyncorp (Site No. 158);
- Page AV Jet Corp (Site No. 188);

- Dulles Airport Marriott (Site No. 208);
- Avis Rent A Car (Site No. 211);
- German Armed Forces Command (Site No. 222); and
- National Oceanic and Atmospheric Administration (NOAA) (Site No. 234).

In addition, nine environmental sites of potential concern have been added since the publication of the Draft EIS as a result of further investigation, additional coordination with MWAA personnel, and design refinements to the proposed LPA. These sites are summarized in Table 4.9-1.

Seven of these sites were identified during a VDEQ file review and meeting with MWAA personnel to resolve security issues and the complexity of the environmental issues at Dulles Airport. They include Construction Trailer Storage Area (Site No. 186A); Utility Buildings B1 and B2 (Site No. 190A); Signature Flight Support (Site No. 191); Drainage Channel North of Signature Flight Support (Site No. 191A); Ogden Allied (Site No. 192); Hertz Rent A Car (Site No. 210); and Hangars A, B, and C (Site No. 222A).

The Former Fletcher Transmission/Fletcher Estate (Site No. 61) was identified during a field investigation subsequent to the publication of the Draft EIS and determined to be a site of potential concern.

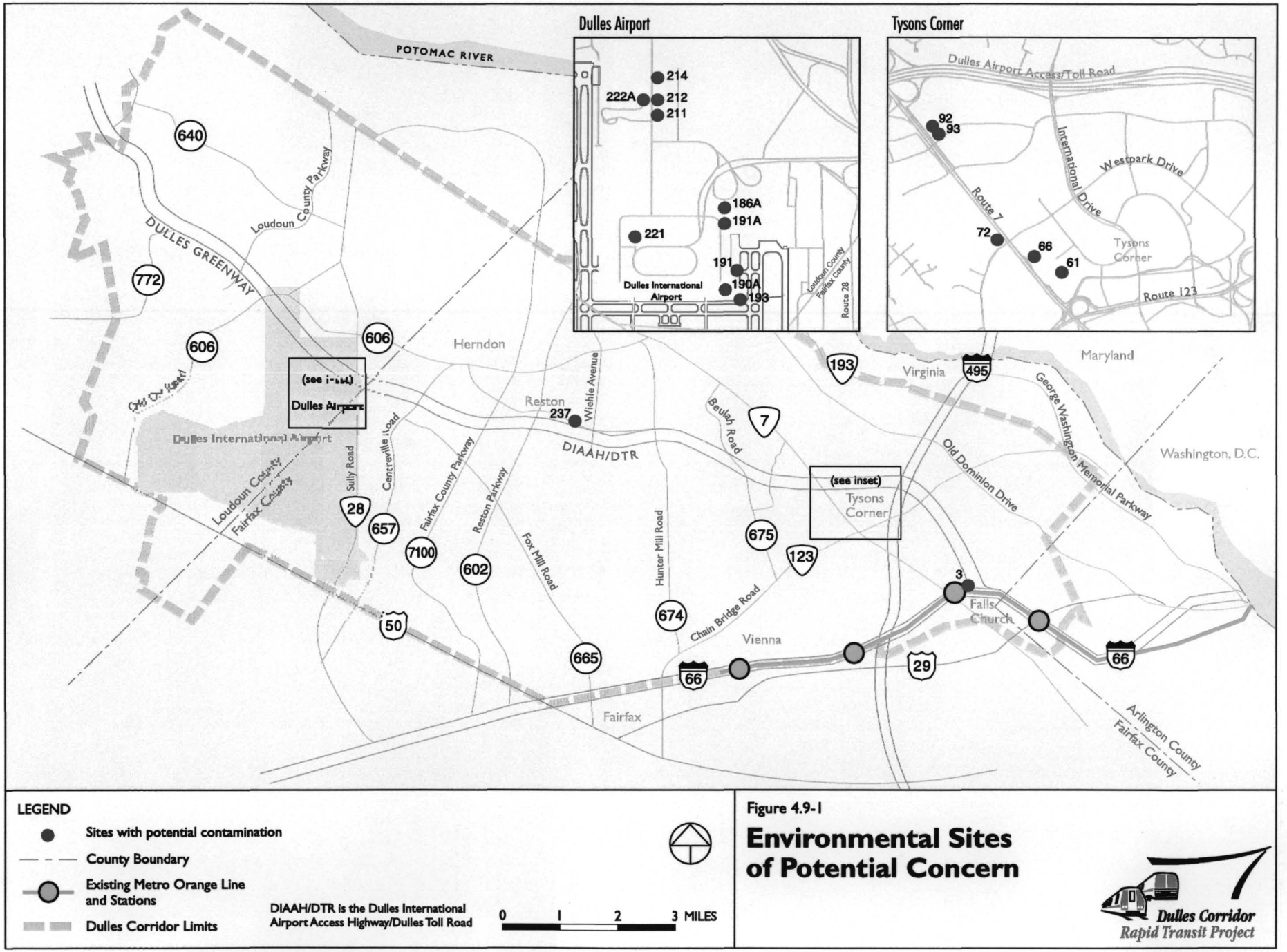
Finally, because the footprint of the Wiehle Avenue Station has been expanded since the publication of the Draft EIS, the Schonstedt Instruments parcel (Site No. 237) was also added.

Figure 4.9-1 shows the locations of environmental sites of potential concern for the proposed LPA and LPA Phase 1.

**Table 4.9-1: Environmental Sites of Potential Concern Not Evaluated in the Draft EIS**

| Site No. | EDR Reported Site Name | Address | EDR Database/Status |
|---|---|---|---|
| 61 | Former Fletcher Transmission/Fletcher Estate (building currently unoccupied) | 8436 Leesburg Pike | LUST – Investigation closed<br>VRP – Case closed 2002 |
| 186A | Construction Trailer Storage Area | Wind Sock Drive | Field ID – Possible HAZMAT storage |
| 190A | Utility Buildings B1 & B2 | 45011 & 45021 Compass Court | File Review = LUST – Investigation closed 9-14-94 |
| 191 | Signature Flight Support | 23940 Windsock Drive | LUST – Investigations closed<br>Interview – Active ASTs |
| 191A | Drainage Channel North of Signature Flight Support | Windsock Drive | LUST – Investigation closed 8-18-94 |
| 193 | Ogden Allied (currently Air BP) | 301 E Terminal Road | UST<br>LUST – Investigations closed 10-5-93 & 9-10-96 |
| 210 | Hertz Rent A Car | 23540 Autopilot Drive | LUSTs – Investigations closed<br>USTs – 3 Active<br>ASTs – 4 Active |
| 222A | Hangars A, B, and C | Autopilot Drive | File Review = LUST – Investigation closed 8-18-94 |
| 237 | Schonstedt Instruments | 11409 Sunset Hills Road | RCRIS-SQG – No violations reported |

Field ID = Not listed on EDR Reports
RCRIS – Resource Conservation and Recovery Information System
FINDS – Facility Index System
VRP – Voluntary Remediation Program
Interview = Information provided through interviews
AST – Aboveground Storage Tank
LUST – Leaking Underground Storage Tank
SQG – Small Quantity Generator
EDR – Environmental Data Report
File Review = Information provided by DEQ file search
UST – Underground Storage Tank




LEGEND

- Sites with potential contamination
- County Boundary
- Existing Metro Orange Line and Stations
- Dulles Corridor Limits

DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road

0 1 2 3 MILES

Figure 4.9-1

# Environmental Sites of Potential Concern

Dulles Corridor Rapid Transit Project

### 4.9.1 LONG-TERM EFFECTS

Long-term effects of the proposed LPA and LPA Phase 1 on hazardous and contaminated materials sites would be similar to those noted in Section 4.9.3.3 of the Draft EIS, except as described below. A summary of hazardous materials impacts associated with refinements to the proposed LPA are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) in Table 4.9-2.

**Table 4.9-2: Effects to Environmental Sites of Potential Concern**

| Sites of Potential Concern | Draft EIS | | LPA Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Number of Sites | No Impacts Related to this Project | 16 Environmental Sites of Potential Concern[1] | 1 Additional Environmental Site of Potential Concern | 17 Environmental Sites of Potential Concern | 7 Environmental Sites of Potential Concern | 7 Environmental Sites of Potential Concern |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of further agency coordination and refinement of the evaluation methodology, as discussed above.

#### 4.9.1.1 No Build Alternative

Under the No Build Alternative, there would be no effects from hazardous materials sites related to the Dulles Corridor Rapid Transit Project. Implementation of the No Build Alternative could result in impacts to sites containing hazardous materials or contamination. Although there could be some long-term effects, the most substantial would be addressed during construction. If contamination is encountered during construction of any of these improvements, then impacts are possible. However, these effects are the responsibility of agencies and jurisdictions implementing the improvements.

#### 4.9.1.2 Proposed Locally Preferred Alternative

The potential long-term effects from hazardous and contaminated materials are described below.

**A. Proposed Full LPA**

As outlined in Table 4.9-2 and illustrated in Figure 4.9-1, there are 17 environmental sites of potential concern within the predicted limits of disturbance for the proposed LPA. The effects associated with the proposed LPA would be similar to those described in Section 4.9.3 of the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exception:

- Because the footprint of the Wiehle Avenue Station was expanded subsequent to the publication of the Draft EIS, 1 additional environmental site of potential concern was identified in the corridor (Schonstedt Instruments, Site No. 237).

If the proposed LPA is not constructed in its entirety, additional parking facilities would be built at the Herndon-Monroe and Route 606 stations to accommodate increased demand for premium bus service in the corridor. However, no environmental sites of potential concern are located within the predicted limits of disturbance for these facilities, and no further impact would occur.

### B. Proposed LPA Phase 1

As outlined in Table 4.9-2 and shown in Figure 4.9-1, there are 7 environmental sites of potential concern within the predicted limits of disturbance for proposed LPA Phase 1. Effects associated with proposed LPA Phase 1 in areas east of the Wiehle Avenue Station would be similar to those described in Section 4.9.3 of the Draft EIS for the Metrorail Alternative (T6/Y15). For areas west of Wiehle Avenue, effects associated with proposed LPA Phase 1 would be similar to those described for the No Build Alternative in the Draft EIS.

## 4.9.2 CONSTRUCTION EFFECTS

The presence of soil and/or groundwater contamination, or the existence of hazardous materials within the existing or proposed right-of-way, can have an adverse impact on the cost and schedule to complete a transportation project. Contaminated groundwater drawn into the dewatering system during construction could require special treatment or permitting prior to disposal. Contaminated soil unearthed during construction could require treatment and disposal and would not be usable for backfilling excavations. In addition, it will be necessary to notify contractors about contaminated sites if worker exposure to hazardous conditions is possible. Therefore, the early identification of potential contamination sites provides valuable information for the alternatives evaluation, design, right-of-way acquisition, and construction phases.

## 4.9.3 MITIGATION

Proposed mitigation measures would be similar to those described in Section 4.9.5 of the Draft EIS. These include: environmental site assessments of any properties to be acquired; an Asbestos Compliance Plan prepared and submitted to the Fairfax County Department of Health prior to construction activities near the intersection of Hunter Mill Road and the DIAAH and Dulles Toll Road; asbestos and lead-based paint inspections prior to building demolitions; and preparation of a Hazardous Materials Management plan for the use of any hazardous materials required during construction.

# 4.10 ENERGY

This section presents the potential long-term and construction effects of the proposed LPA, LPA Phase 1, and No Build Alternative on transportation-related energy consumption in the Dulles Corridor. Changes in evaluation methodology and existing conditions since the Draft EIS are discussed, followed by an evaluation of long-term effects, construction effects and mitigation.

Since publication of the Draft EIS, energy usage estimates have been recalculated for the 2025 No Build and Metrorail (T6/Y15) alternatives. The changes result in a decrease in overall corridor-wide energy usage, however, the corridor-wide energy usage estimated for the Metrorail Alternative (T6/Y15) increases relative to the No Build Alternative.

## 4.10.1 LONG-TERM EFFECTS

The long-term effects of the proposed project are based on forecast vehicular traffic volumes and Metrorail speeds, and corridor lengths. Vehicle mix information was obtained from the MWCOG Urban Vehicle Miles Traveled (VMT) mix for the Maryland-Virginia-Washington, D.C. region. The estimated fuel consumption figures take into account expected future fuel efficiency improvements.

Table 4.10-1 presents a summary of the long-term effects associated with the proposed LPA refinements, including proposed LPA Phase 1, in relation to the Draft EIS No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 4.10-1: Summary of 2025 Direct Energy Consumption**

| Energy | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative[1] | Metrorail Alternative (T6/Y15)[1] | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Annual Roadway Btus (millions) | 32,964,147 | 34,183,169 | 0 | 34,183,169 | 24,125,083 | 33,378,220 |
| Total Roadway Fuel Consumed (gallons) | 228,658,361 | 228,431,814 | 0 | 228,431,814 | 167,347,66 | 225,756,802 |
| Percent change from No Build | -- | -0.07 | 0 | -0.07 | 0.03%[2] | -1.27 |
| Annual Metrorail Btus Consumed (millions) | 0 | 1,241,877 | 0 | 1,241,877 | 550,630 | 832,701 |
| Total Annual Btus Consumed (millions) | 32,964,147 | 34,183,169 | 0 | 34,183,169 | 24,675,713 | 33,378,220 |
| Total Annual Bbls consumed | 5,683,474 | 5,893,649 | 0 | 5,893,649 | 4,254,433 | 5,754,865 |
| Percent change from No Build | -- | 3.7 | 0 | 3.7 | 0.31% | 1.26 |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of agency reviews and refinement of the evaluation methodology.

[2] Calculated as change from No Build condition in 2009, as shown in Table 4.10-3.

### 4.10.1.2 No Build Alternative

The effects of the No Build Alternative would be similar to those described in the Draft EIS. There would be no project-related energy effects from this alternative

### 4.10.1.3 Proposed Locally Preferred Alternative

The potential long-term energy effects from the proposed LPA and LPA Phase 1 are described below.

#### A. Proposed Full LPA

As outlined in Table 4.10-1, the effects of the refinements made to the proposed LPA would be similar to those presented in the Draft EIS for the Metrorail Alternative (T6/Y15).

#### B. Proposed LPA Phase 1

The energy consumption for proposed LPA Phase 1 and the No Build Alternative is presented in Table 4.10-2. Proposed LPA Phase 1 would consume approximately 0.3 percent more fuel than the No Build Alternative because the energy savings that would result from fewer vehicles traveling along the corridor would be offset by energy that would be expended on Metrorail trains.

**Table 4.10-2: Direct Energy Consumption for 2009 LPA Phase 1**

| Annual Direct Energy | Alternative | |
|---|---|---|
| | No Build | LPA Phase 1 |
| Btus Consumed (millions) | 24,599,527 | 24,675,713 |
| Bbls Consumed | 4,241,298 | 4,254,433 |
| Percent change from No Build Alternative | -- | 0.3 |
| Total Roadway Fuel | 170,638,312 | 167,347,666 |
| Percent change from No Build Alternative | -- | -1.9 |

## 4.10.2 CONSTRUCTION EFFECTS

Energy consumption associated with construction (indirect energy) was calculated for each of the proposed Build Alternatives and reflects the one-time, non-recoverable energy costs associated with the construction of tracks and modifications to existing roadways. The indirect energy analysis was based on the number of lane-miles and track-miles proposed. This includes construction of surface, tunnel, and elevated roadway and track segments. These figures were then multiplied by construction energy factors which estimate the amount of energy necessary to extract raw materials, manufacture and fabricate construction materials, transport materials to the work site and complete construction activities. Results of the indirect energy analysis are discussed below by alternative. Table 4.10-3 presents a summary of the effects of the proposed LPA refinements in relation to the No Build Alternative, the proposed LPA and LPA Phase 1.

**Table 4.10-3: Indirect Construction Energy Consumption**

| Annual Energy Consumption | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Btus Consumed (Millions) | n.a. | 1,820,028 | 0 | 1,820,028 | 879,784 | 879,784 |
| Bbl Consumed | n.a. | 313,797 | 0 | 313,797 | 151,687 | 151,687 |
| Bbl per Mile | n.a. | 4,605 | 0 | 4,605 | 5,165 | 5,165 |

Although the proposed LPA would include the construction of the tunnel extension at Dulles Airport, the additional energy effects would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15).

## 4.10.3 MITIGATION

Proposed mitigation measures would be similar to those described in Section 4.10.4 of the Draft EIS. These include: conservation of energy in facility planning, construction, operation and maintenance; recycling of pavements and hardware items (guardrails, signals, tires, right-of-way, and similar equipment); using indigenous plants for landscaping; and applying BMPs in roadway maintenance.

# 5 ECONOMIC EFFECTS

This chapter presents the long-term effects of the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1 and the No Build Alternative on the local and regional economy.

## 5.1 ECONOMIC EFFECTS

The economic effects of the project are generated by the direct effects of construction spending. Construction and operation activities could generate an expansion in payrolls, a proportional increase in consumer demands, as well as new employment in various industrial sectors and occupational categories. Because the capital costs of the proposed LPA have increased from $3.1 billion to $3.4 billion in year-of-expenditure (YOE) dollars, the indirect economic effects have changed accordingly. The total capital costs for proposed LPA Phase 1 are approximately $1.5 billion, as detailed in Chapter 8 of this document.

The economic effects for the Metrorail Alternative (T6/Y15) have been revised from the amount reported in the Draft EIS due to revisions to the financial plan, which has been further refined as planning and coordination with local governments has progressed. A majority of the contribution from the Commonwealth of Virginia would be based on excess revenues from the Dulles Toll Road. Because these funds would primarily be generated by residents of Fairfax and Loudoun counties rather than from sources outside the local area, the assumptions used for this analysis were adjusted to account for a lower amount of "new money" coming into the local area from state funds. As such, the indirect economic effects have decreased from the amount presented in the Draft EIS for the Metrorail Alternative (T6/Y15).

Based on these changes, the indirect economic effects of the Metrorail Alternative (T6/Y15) have been revised accordingly from those presented in the Draft EIS, as follows. For Fairfax and Loudoun counties, the effect of construction spending for the Metrorail Alternative (T6/Y15) would result in $1.55 billion in output in year 2001 dollars, $274 million in earnings (2001 dollars) and 10,760 person-year jobs. Within the Commonwealth of Virginia, construction spending would result in $2.05 million in output (2001 dollars), $584 million in earnings (2001 dollars) and 22,757 person-year jobs.

### 5.1.1 LONG-TERM EFFECTS

The economic effects of the proposed LPA, including the proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) are summarized below.

#### 5.1.1.1 No Build Alternative

The No Build Alternative would not have any project-related capital costs and would not generate any project-related economic benefits.

#### 5.1.1.2 Proposed Locally Preferred Alternative

The economic impacts of the proposed LPA are described below.

#### A. Proposed Full LPA

There are no significant changes in the long-term economic benefits of the proposed LPA as compared to the revised effects for the Metrorail Alternative (T6/Y15) described in section 5.1. The economic benefits of the proposed LPA would be approximately 1.6 percent greater than the revised amount estimated for the Metrorail Alternative (T6/Y15) because of the higher construction costs associated with the proposed LPA. The total number of full-time employees associated with the proposed LPA would be similar to that reported for the Metrorail Alternative (T6/Y15) in the Draft EIS.

For Fairfax and Loudoun counties, the effect of construction spending for the proposed LPA would result in $1.58 billion in output in year 2001 dollars, $279 million in earnings (2001 dollars) and 10,937 person-year jobs. Within the Commonwealth of Virginia, construction spending would result in $2.1 billion in output (2001 dollars), $594 million in earnings (2001 dollars) and 23,135 person-year jobs.

#### B. Proposed LPA Phase 1

If the proposed LPA were not constructed in its entirety during the forecast period, proposed LPA Phase 1 would have lower construction costs but less economic benefits to the region than that reported for the Metrorail Alternative (T6/Y15) or the proposed Full LPA. The indirect economic benefits of the proposed LPA Phase 1 are expected to be approximately 47 percent of those resulting from the proposed full LPA. For Fairfax and Loudoun counties, the effect of construction spending for the proposed LPA Phase 1 would result in $732 million in output (2001 dollars), $129 million in earnings (2001 dollars) and 5,062 person-year jobs. Within the Commonwealth of Virginia, construction spending would result in $968 million in output (2001 dollars), $275 million in earnings (2001 dollars) and 10,695 person-year jobs.

The direct effects of the proposed LPA Phase 1 would primarily be generated during the construction period, while indirect effects are expected to continue filtering through the economy for several years after construction.

Implementation of the proposed LPA Phase 1 would require 520 more transit system employees than the No Build Alternative, but fewer than the proposed full LPA.

## 5.2 STATION AREA DEVELOPMENT

Since the Draft EIS was published in June 2002, several new large-scale development proposals have progressed further through the local planning and permitting processes, thereby providing more detailed information on development that would be generated under the density bonuses allowed by Fairfax and Loudoun counties if Metrorail is extended to certain station areas. Details on these developments are provided in Chapter 3 of this Supplemental Draft EIS. As a result, the development projections at several station areas for the Metrorail Alternative (T6/Y15) have been updated to reflect this more current information. The projections for retail space for the No Build Alternative and the Metrorail Alternative (T6/Y15) have also been adjusted to be more consistent with measures used by Fairfax County to estimate square footage based on the number of retail employees.

Proposed LPA Phase 1 would include only five stations: Tysons East, Tysons Central 123, Tysons Central 7, Tysons West, and Wiehle Avenue.

### 5.2.1 LONG-TERM EFFECTS

The total station area development effects associated with the proposed LPA, including the proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) are described below.

#### 5.2.1.1 No Build Alternative

The No Build Alternative would have no project-related station area development benefits.

#### 5.2.1.2 Proposed Locally Preferred Alternative

The long-term economic benefits of the proposed LPA, including LPA Phase 1, are described below.

**A. Proposed Full LPA**

The station area development characteristics under the proposed LPA would be similar to those presented in the Draft EIS for the Metrorail Alternative (T6/Y15). While the design changes would result in minor changes to the alignment or station configurations, these changes would not have a significant effect on the development potential of the station areas. Station area development related to the proposed LPA would result in an 11 percent increase in population and a 16 percent increase in employment in the corridor by 2025.

**B. Proposed LPA Phase 1**

If the proposed LPA were not constructed in its entirety during the forecast period, the long-term levels of station area development in the corridor generated under the proposed LPA Phase 1 would be less than that projected for the proposed Full LPA. Station area development related to the proposed LPA Phase 1 would result in a 4.5 percent increase in population, and a 6.3 percent increase in employment in the corridor by 2025.

Under the proposed LPA Phase 1, Wiehle Avenue would be the terminal station of the Metrorail line. Fairfax and Loudoun counties have both tied density bonuses to the implementation of rail rapid transit. If the full proposed LPA is not constructed during the forecast period, property owners that own property within station areas west of Wiehle Avenue would develop or redevelop their property at current patterns and allowable densities. As a result, the long-term levels of development at these station areas would be closer to those described in the Draft EIS for the No Build Alternative. The long-term effects on development at Wiehle Avenue are expected to be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), however the rate of development may be accelerated because it would be the terminal station under the proposed LPA Phase 1.

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# 6 TRANSPORTATION EFFECTS

This chapter presents the potential long-term and construction effects of the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1, and the No Build Alternative on the local and regional transportation network. The methodology used to assess these impacts and the existing conditions in the corridor are the same as those discussed in Chapter 6 of the Draft EIS.

## 6.1 TRANSIT EFFECTS

The Dulles Corridor Rapid Transit Project would add rapid transit service, in the form of Metrorail and premium bus service, to the Dulles Corridor. The corridor is currently served by express and local bus services, as documented in the Draft EIS for the No Build Alternative, and shown on Figure 6.1-1. Implementation of the proposed LPA would result in a substantial increase in high-quality transit capacity within the Dulles Corridor.

Two of the major goals of the Dulles Corridor Rapid Transit Project, as outlined in Chapter 1 of this document, are to increase transit ridership and improve transportation service in the corridor. This section presents the potential long-term effects on the proposed LPA and proposed LPA Phase 1 on the baseline transit system and the effectiveness of the proposed LPA and proposed LPA Phase 1 phasing in meeting these goals. Effects are discussed in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) presented in the Draft EIS. In Section 6.1.1, the operations planning process for the proposed LPA and proposed LPA Phase 1 are briefly described. Then forecasted transit ridership for each alternative under consideration in this Supplemental Draft EIS is summarized in Section 6.1.2. Section 6.1.3 presents an analysis of the effects of the proposed LPA on passenger convenience, and Section 6.1.4 outlines the effects on the amount of transit service in the Dulles Corridor. Section 6.1.5 includes a discussion of the anticipated impacts of the proposed LPA on the operation of the existing Metrorail system. Finally, Section 6.1.6 presents the estimated operations and maintenance costs for each alternative under consideration.

### 6.1.1 TRANSIT OPERATIONS PLANNING

Operating plans were developed based on a common set of assumptions relative to fares, service frequencies, vehicle load factors, vehicle dwell times, corridor parking capacities, and other service variables. The planning process used to determine the relevant operating requirements for such elements as service frequency, train length, peak vehicle needs (for both rail and bus), and revenue vehicle hours and miles (for both rail and bus) for the proposed LPA and proposed LPA Phase 1, was conducted in the same manner as discussed in the Draft EIS for the No Build and Metrorail (T6/Y15) alternatives.

Each alternative was then modeled for its opening and design year (2025) based on a preliminary service plan. Following initial model runs, these preliminary service plans were adjusted to provide adequate capacity for

ridership demand at maximum load points. The operating plans reflect both line-haul services operating within the corridor formed by the Dulles Connector Road, the Dulles International Airport Access Highway (DIAAH), and the Dulles Toll Road, and complementary local and feeder bus service operating in activity centers along the corridor. Specific route changes and adjustments to service frequencies for the No Build and Metrorail (T6/Y15) alternatives presented in the Draft EIS, as well as additional details regarding the operations planning process, are presented in the *Transit Operations and Maintenance Plan* (June 2002). The operating plan for the proposed LPA was assumed to be the same as that for the Metrorail Alternative (T6/Y15).

In addition, since the publication of the Draft EIS, an operating plan was developed for proposed LPA Phase 1. Transit operations in proposed LPA Phase 1 would consist of:

- Metrorail service to Wiehle Avenue; and
- Premium bus service from Wiehle Avenue to the western parts of the corridor.

Local feeder bus services would be provided by Fairfax Connector, Metrobus, and Loudoun County. Premium bus service would provide connectivity between Wiehle Avenue Station and stations/stops in the western end of the corridor, and would provide a level of service meant to closely replicate Metrorail service. It would consist of the five routes or route families described below (see Figures 6.1-1 through 6.1-3):

- **Loudoun 101.** This route would operate between Route 772, Dulles North Transit Center, and Wiehle Avenue, with stops at the Herndon-Monroe Park-and-Ride during the off-peak period. Service frequencies during the peak period would be 6 minutes in the peak direction and 20 minutes in the off-peak direction. Service frequencies in the off-peak period would be 20 minutes in each direction.
- **Loudoun 102.** This route would operate between Route 772, Dulles Airport, and Wiehle Avenue. This service would operate with 30-minute frequencies all day in both directions. In addition, after stopping at Wiehle Avenue, this service would continue to Reston Town Center to provide a direct connection to Reston Town Center for Loudoun County residents.
- **Loudoun 103.** This route would operate between Dulles Airport and Wiehle Avenue all day in both directions on 30-minute frequencies. This service would also continue to Reston Town Center after stopping at Wiehle Avenue.
- **FXC 920 series.** This series is a group of Fairfax Connector routes that currently serve Reston and Herndon and then feed into the Herndon-Monroe Park-and-Ride facility. Under proposed LPA Phase 1, these routes would continue to Wiehle Avenue after serving Herndon-Monroe. They would provide the same level of service as provided under the No Build Alternative and the proposed LPA.
- **FXC 980.** This route is currently the high-frequency express route between Herndon-Monroe and West Falls Church. Under proposed LPA Phase 1, this service would be truncated to act as a high-frequency shuttle service between Herndon-Monroe and Wiehle Avenue. This service would run every six minutes in the peak direction during the peak period.

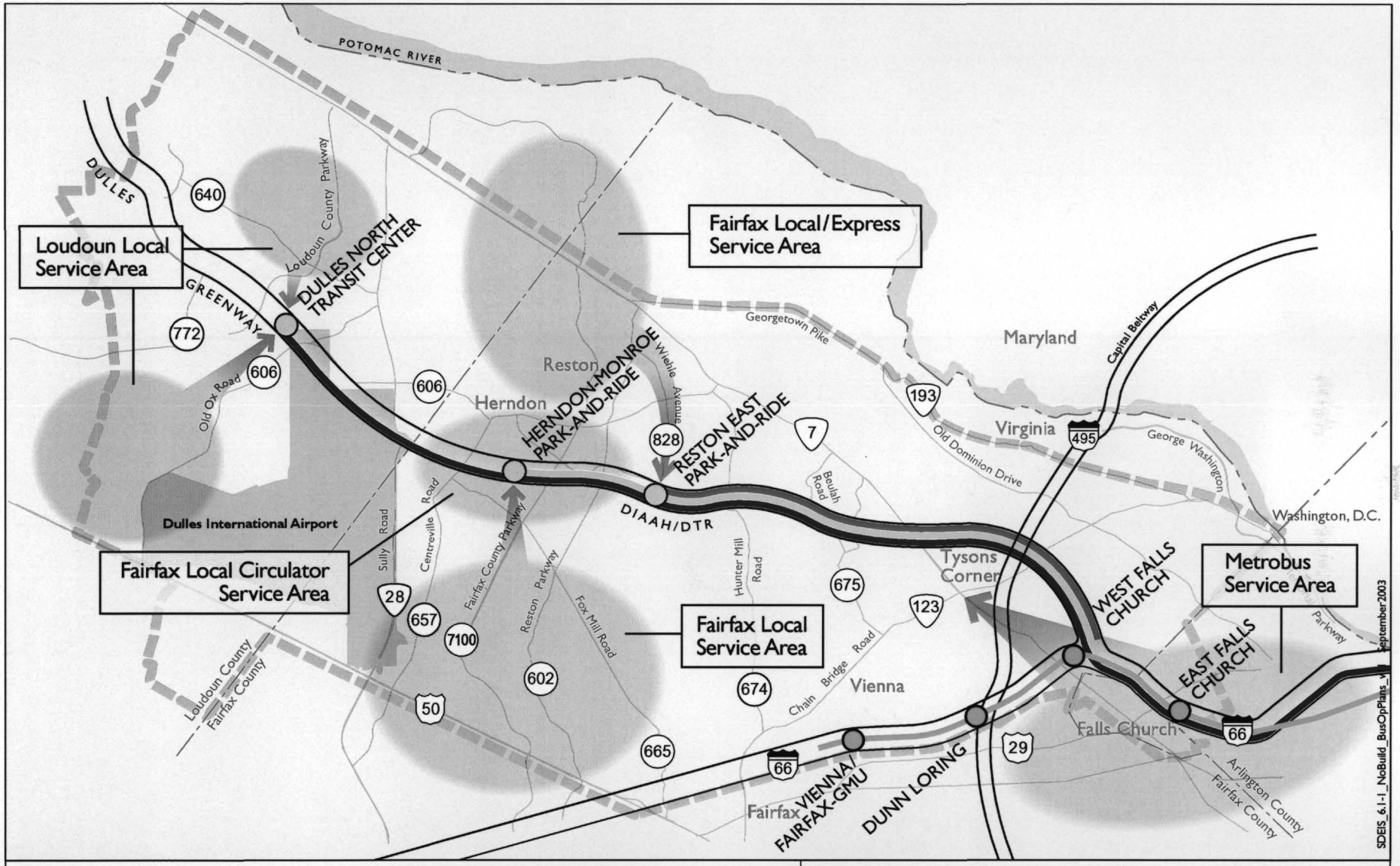


Figure 6.1-1

# No Build Bus Operating Plans

Dulles Corridor Rapid Transit Project

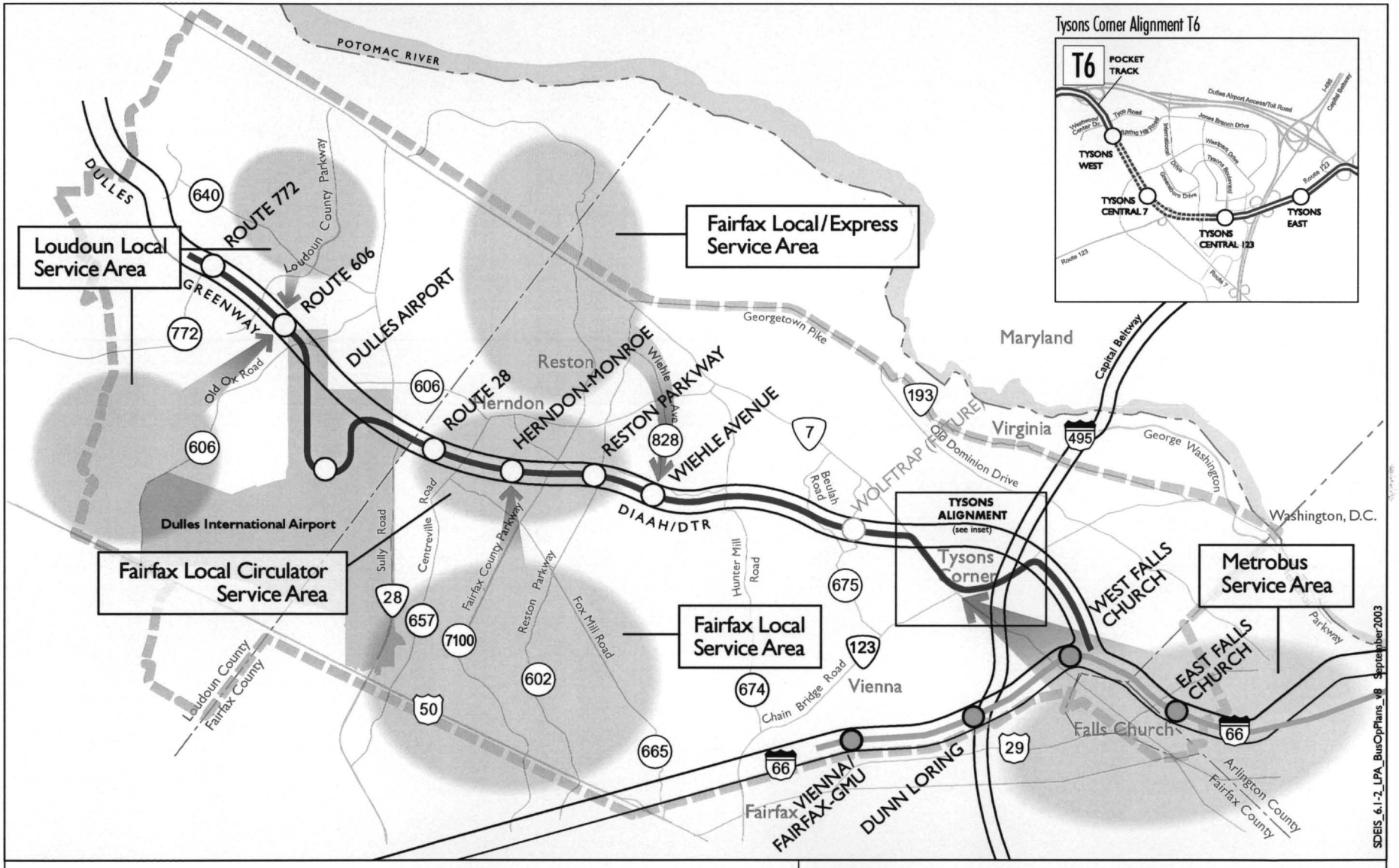


Figure 6.1-2

# Proposed Locally Preferred Alternative Bus Operating Plans

Dulles Corridor Rapid Transit Project

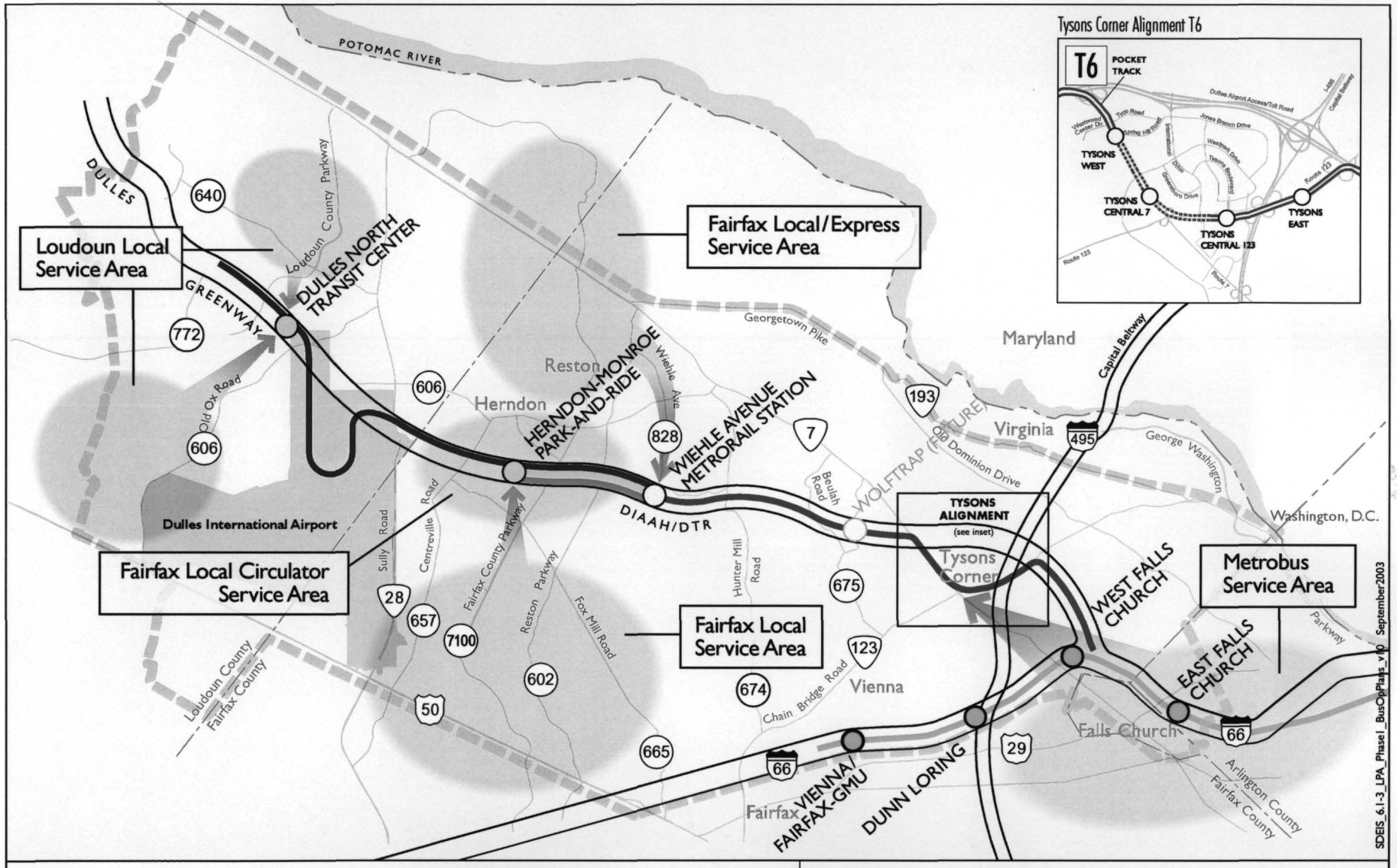


Figure 6.1-3

# Proposed Locally Preferred Alternative Phase 1 Bus Operating Plans

Dulles Corridor Rapid Transit Project

### 6.1.2 TRANSIT RIDERSHIP

The change in ridership resulting from implementation of the rapid transit service in the Dulles Corridor is a measure of fundamental importance in assessing the effects of the proposed LPA design modifications. The potential influences of the proposed LPA design modifications, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15), on regional transit ridership, ridership at proposed stations in the corridor, and the transit mode share in the corridor, are summarized in the following sections.

The proposed LPA would have similar increases in ridership and transit mode share to those presented in the Draft EIS for the Metrorail Alternative (T6/Y15) relative to the No Build Alternative. The proposed LPA is projected to attract nearly 40,000 new riders to the regional transit system in 2025, and the transit mode share at various activity centers in the corridor is expected to increase by roughly 3 to 5 percent. Development in station areas associated with the implementation of rail is expected to increase overall Metrorail ridership by 14 to 18 percent.

For proposed LPA Phase 1, ridership and mode share increases would be less than those for the proposed LPA, but would represent an improvement over the No Build Alternative. If the proposed LPA is not implemented in its entirety by 2025, proposed LPA Phase 1 is estimated to attract 23 percent fewer new riders to the regional transit system and would result in a 1 to 2 percent lower transit mode share at corridor activity centers.

#### 6.1.2.1 Regional Transit Ridership

Table 6.1-1 presents the average weekday ridership estimates associated with the proposed LPA design modifications in relation to the No Build and Metrorail (T6/Y15) alternatives. The first two rows of the table present ridership related specifically to the Dulles Corridor, while the remaining four rows present forecast activity for the entire Washington metropolitan region.

The "Total Corridor Trips" row reflects all corridor-related boardings and alightings for the Metrorail system and/or premium bus service, including passengers entering the system outside of the corridor but exiting at a corridor station or stop. Total corridor riders include trips that both begin and end in the corridor. "Total Corridor Boardings" represent all trips that board the system at a station within the Dulles Corridor. Each round trip originating within the corridor includes at least one boarding. Where the origin and destination stations/stops both lie completely within the corridor, a round trip would include two corridor boardings.

The "Regional HBW Rail/Premium Bus Trips" row represents total daily regional rail or premium bus trips that begin at the trip maker's home and end at his place of work. Home-based work trips are an important set of trips to consider in ridership analysis because travel between home and work is the most predominant reason people use public transportation. The "Regional Total Regional Rail/Premium Bus Trips" row represents all daily Metrorail and/or premium bus trips, not just those used for the commute between home and work. "Regional Total Transit Trips" reflects forecast ridership on the assumed regional transit network, and includes Metrorail trips, premium bus trips, commuter rail trips, and trips made by local bus. The "Regional New Trips" column presents the number of new transit riders attracted to the regional transit network as a result of the implementation of each alternative. The number of new riders for an alternative is calculated by subtracting the Baseline "Regional Total Transit Trips" for a given year from the alternative's "Regional Total Transit Trips" for the corresponding year of analysis.

**Table 6.1-1: Average Weekday Transit Patronage Forecasts**

| | Draft EIS | | Changes in Effects T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | | | LPA Phase 1 Opening Year | | | |
| | | | | | Metro-rail | Prem. Bus | Total | No Build | Metro-rail | Prem. Bus | Total |
| **Project-Related Corridor Ridership Activity** | | | | | | | | | | | |
| Total Corridor Trips | n.a. | 86,900 | +500 | 87,400 | 67,700 | 3,600[1] | 71,300 | n.a. | 53,600 | 3,000[1] | 56,600 |
| Total Corridor Boardings | n.a. | 53,200 | +700 | 53,900 | 29,600 | 11,100 | 40,700 | n.a. | 25,200 | 7,400 | 32,600 |
| **Regional Ridership Activity** | | | | | | | | | | | |
| Regional HBW Rail/ Prem. Bus | 578,800 | 609,500 | +900 | 610,400 | 601,000 | | n.a. | 477,900 | 513,500 | | n.a. |
| Regional Total Rail/ Prem. Bus | 929,100 | 990,900 | +700 | 991,600 | 978,700 | | n.a. | 761,500 | 821,200 | | n.a. |
| Regional Total Transit Trips | 1,279,700 | 1,318,000 | +1,000 | 1,319,000 | 1,309,700 | | n.a. | 1,079,000 | 1,115,800 | | n.a. |
| Regional New Trips | n.a. | 38,300 | +1,000 | 39,300 | 30,000 | | n.a. | n.a. | 36,800[2] | | n.a. |

HBW – home-based work

1: This figure represents ridership activity that occurs on premium bus only with no transfer to rail. Trips that start with premium bus but also involve utilization of Metrorail are included in the Metrorail column.

2: Calculation based on 2009 Baseline.

The No Build Alternative would not provide rapid transit service in the Dulles Corridor, therefore, there would be no project-related effects from this alternative.

The proposed LPA is projected to attract similar levels of ridership to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), although the proposed LPA is expected to attract 500 more total daily riders than the Metrorail Alternative (T6/Y15) in 2025 and 1,000 more new riders to the regional transit system due to the addition of park-and-ride capacity at Route 772.

Proposed LPA Phase 1 would generate a smaller increase in transit ridership than the full LPA due to the forced transfer at Wiehle Avenue for many trips and the reduced attractiveness of premium bus service to many riders (relative to rail). If the proposed LPA is not implemented in its entirety, proposed LPA Phase 1 is projected to attract approximately 81 percent of the total daily riders attracted by the full LPA in 2025 (including premium bus riders). Approximately 9,300 fewer new riders would be attracted to the regional transit system in 2025 for proposed LPA Phase 1. Note that proposed LPA Phase 1 has lower regional ridership in its opening year than the No Build Alternative in 2025. This difference occurs because regional growth in population and employment by 2025 would significantly increase regional transit ridership with or without the Dulles Corridor improvements.

As discussed in Section 6.2 of the Draft EIS, a supplemental analysis was undertaken to estimate Metrorail ridership in the Dulles Corridor under a rail-related development scenario. The analysis shows that ridership on the Metrorail Alternative would increase by 14 to 18 percent over the Metrorail ridership estimates presented in

Table 6.1-1. The full results of the development-related ridership analyses are presented in the *Travel Demand Forecasting Methodology and Results Report* (June 2002).

### 6.1.2.2 Daily Station Boardings

The estimated number of daily boardings at proposed stations associated with the proposed LPA and proposed LPA Phase 1, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) is outlined below in Table 6.1-2

**Table 6.1-2: Forecast Daily Station Boardings in Dulles Corridor**

| | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | | | |
|---|---|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | | LPA Phase 1 Opening Year | |
| | | | | | Metrorail | Prem. Bus | Metrorail | Prem. Bus |
| Tysons East | n.a. | 5,559 | +203 | 5762 | 5,531 | n.a. | 5,027 | n.a. |
| Tysons Central 123 | n.a. | 6,589 | +100 | 6,689 | 6,252 | n.a. | 5,112 | n.a. |
| Tysons Central 7 | n.a. | 4,181 | +106 | 4,287 | 3,909 | n.a. | 3,563 | n.a. |
| Tysons West | n.a. | 6,418 | -1260 | 5,158 | 4,741 | n.a. | 4,022 | n.a. |
| Wiehle Avenue | n.a. | 6,645 | +146 | 6,791 | 9,164 | n.a.[1] | 7,432 | n.a.[1] |
| Reston Parkway | n.a. | 2,901 | +37 | 2,938 | n.a. | n.a. | n.a. | n.a. |
| Herndon-Monroe | n.a. | 7,863 | -199 | 7,664 | n.a. | 3,997 | n.a. | 2,284 |
| Route 28 | n.a. | 2,381 | +203 | 2,584 | n.a. | n.a. | n.a. | n.a. |
| Dulles Airport | n.a. | 4,334 | -23 | 4,311 | n.a. | 3,545 | n.a. | 2,334 |
| Route 606 | n.a. | 4,869 | -2,134 | 2,735 | n.a. | 2,384 | n.a. | 2,162 |
| Route 772 | n.a. | 1,481 | +3,462 | 4,943 | n.a. | 1,238 | n.a. | 653 |

[1] Premium bus service at Wiehle Avenue would have significant boardings, especially in the p.m. peak period.

Under the proposed LPA, the most significant changes in station boardings, relative to the Metrorail Alternative (T6/Y15) would be at the Tysons West, Route 606, and Route 772 stations. The changes at these stations would be attributable to the increases or decreases in parking capacity at these stations for the proposed LPA.

For proposed LPA Phase 1, boardings at the Wiehle Avenue Station would increase significantly over those for the proposed LPA because this station would not only be the terminal station for Metrorail service, it would also serve as the transfer point between Metrorail service and premium bus service. West of Wiehle Avenue, boardings at stations/stops served by premium bus service would decline relative to the proposed LPA because the premium bus service would not attract as many riders as Metrorail.

### 6.1.2.3 Corridor Transit Mode Share

Changes in transit mode share identify whether overall corridor travel choices are changing and whether people have switched to transit from their automobiles because of the presence of the new corridor rapid transit service. Transit mode share analysis distinguishes between absolute transit volumes and the overall effectiveness of transit service in meeting regional travel needs. If transit ridership goes up while its mode share declines, then transit is not succeeding in contributing to the performance of the overall transportation system.

The effects of the proposed LPA and proposed LPA Phase 1 on corridor transit mode share, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15), are summarized below in Table 6.1-3.

**Table 6.1-3: Transit Mode Share for Home-Based Work Trips (Trips Attracted to the Dulles Corridor)**

| | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Tysons Corner | 10.0% | 15.8% | +0.3% | 16.1% | 14.9% | 14.8% |
| Reston | 2.9% | 7.2% | +0.3% | 7.5% | 6.9% | 6.4% |
| Herndon/Dulles | 1.7% | 4.8% | +0.4% | 5.2% | 2.7% | 2.7% |
| Loudoun East | 0.4% | 0.7% | -0.1% | 0.6% | 0.5% | 0.6% |

The increases in home-based work transit mode share for the proposed LPA would be similar to those presented in the Draft EIS for the Metrorail Alternative (T6/Y15). Relative to the No Build Alternative, transit mode share for the proposed LPA would increase in each of the corridor sub areas because of the implementation of a much more attractive transit service than the bus service provided in the No Build Alternative. Because the proposed LPA would have slightly higher ridership levels than the Metrorail Alternative, the mode share for each activity center would also increase slightly relative to the Metrorail Alternative (T6/Y15).

Proposed LPA Phase 1 would result in less improvement in home-based work transit mode share at activity centers than the proposed LPA, due to a lower overall ridership. However, in the eastern end of the corridor the increase in mode share for proposed LPA Phase 1 would be a decent improvement over No Build Alternative mode shares. In the western end of the corridor, mode share improvements would be relatively minor.

### 6.1.3 EFFECTS ON PASSENGER CONVENIENCE

Improvements in passenger convenience that would result from implementation of the proposed LPA can be evaluated by considering transit travel times, hours of operation, frequency of service, and transfer requirements. The proposed LPA would offer similar improvements in passenger convenience to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The proposed LPA would result in more frequent service in the peak period and substantially more frequent service during the off-peak period. For most trips, the proposed LPA would improve travel times and require fewer transfers. Hours of operation would be expanded for many services. The proposed LPA would improve the convenience of transit services in the corridor faster than the No Build Alternative, but would not provide improvements in the near-term.

Proposed LPA Phase 1 would improve the convenience of existing services for passengers, but would not provide the same degree of improvements as the full LPA. Though increases in service frequencies would be similar, travel time savings would not be as great for proposed LPA Phase 1, and transfer requirements would generally not improve over the No Build. However, proposed LPA Phase 1 is anticipated to begin providing improved service throughout the Dulles Corridor approximately six years earlier than the full LPA, as proposed.

More detailed information on travel times, hours of operation, frequency of service, and transfer requirements for the alternatives under consideration is presented in the following sections.

### 6.1.3.1 Transit Travel Times

The level of convenience for passengers using transit is directly related to the amount of time that is required to make a trip by rail or bus versus alternative modes such as the automobile. The longer a transit trip takes the less attractive transit becomes relative to other modes for travelers who have a choice of mode. For passengers who do not have access to other modes and thus rely on transit for their basic mobility needs, excessive transit travel times result in less time to spend on other activities and priorities.

Travel times in the Dulles Corridor would not be improved under the No Build Alternative.

The proposed LPA would provide similar improvements in travel times to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). For all but one origin-destination (O/D) pair, the proposed LPA would improve transit travel times over those for the No Build Alternative, especially for reverse commute trips and trips with one end in Tysons Corner. For many trips, transit travel times would improve by 20 to 30 minutes. The transit travel times for the proposed LPA would generally be time-competitive with highway travel (travel by private vehicle).

In general, proposed LPA Phase 1 would offer less travel time savings than the full LPA, but it would still offer an improvement in transit travel times over the No Build Alternative for most O/D pairs. For trips traveling between Wiehle Avenue and points east, proposed LPA Phase 1 would provide similar travel times to the full LPA, because the Metrorail service would be similar in this portion of corridor. For trips with at least one end west of Wiehle Avenue, proposed LPA Phase 1 would have greater travel times than the full LPA due to transfer requirements and decreased service frequency in the reverse peak direction. If the proposed LPA is not implemented in its entirety in 2025, proposed LPA Phase 1 would generally have travel times that are 5 to 10 minutes longer than the full LPA.

### 6.1.3.2 Hours of Operation and Frequency of Service

Hours of operation and service frequency, especially in the off-peak, are important determinants of the quality and convenience of transit service that would be provided in the Dulles Corridor, including how well transit supports everyday activities and travel needs, other than peak hour commutes.

The hours of operation for the proposed LPA would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). Overall span of service for the proposed LPA would correspond to the existing Metrorail system's operating hours: 5:30 a.m. to 12 p.m. on weekdays (3 a.m. on Friday), 7 a.m. to 3 a.m. on Saturdays, and 7 a.m. to midnight on Sundays. For proposed LPA Phase 1, both Metrorail and the premium bus services would have the same hours of operation as described for the proposed LPA.

The frequency of service associated with the alternatives under consideration in the Supplemental Draft EIS is summarized below in Table 6.1-4.

**Table 6.1-4: Peak and Off-Peak Headways in the Dulles Corridor (in minutes)**

| | | Draft EIS | | Changes in Effect (Tc/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|---|
| | | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Peak Period | Fairfax County Connector Service | 5-30 | 60 | 0 | 60 | 60 | 60 |
| | Loudoun County Commuter Service | 15 | 30 | 0 | 30 | 30 | 30 |
| | Metrorail | n.a. | 6 | 0 | 6 | 6 | 6 |
| | Metrobus | 15-30 | 15-30 | 0 | 15-30 | 15-30 | 15-30 |
| | Premium Bus Service | n.a. | n.a. | 0 | n.a. | 6-20 | 6-20 |
| Off-Peak Period | Fairfax County Connector Service | 30-60 | 60 | 0 | 60 | 60 | 60 |
| | Loudoun County Commuter Service | 60 | No service | 0 | No service | No service | No service |
| | Metrorail | n.a. | 12 | 0 | 12 | 12 | 12 |
| | Metrobus | 30-60 | 30-60 | 0 | 30-60 | 30-60 | 30-60 |
| | Premium Bus Service | n.a. | n.a. | n.a. | n.a. | 20 | 20 |

The proposed LPA and proposed LPA Phase 1 would provide similar improvements in service frequencies to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The service frequencies for the proposed LPA were designed to be consistent with current Metrorail operations. Accordingly, the proposed LPA would operate with 6-minute headways in the peak period and 12-minute headways at most other times. In the peak period, this level of service is better than what would be provided under the No Build Alternative, and in the off-peak period—where headways for most travel markets in the corridor improve from 60 minutes to 12 minutes—the level of service would be far better than that provided by the No Build Alternative.

For proposed LPA Phase 1, the frequency of service east of and including Wiehle Avenue would be the same as that for the full LPA. The premium bus service proposed for points west of Wiehle Avenue is intended to operate in the peak direction with frequencies comparable to those provided by rail segment. However, premium bus services would operate in heavily congested conditions when accessing and exiting stations and stops, and could experience delays that affect service frequency. In the reverse-peak direction and during the off-peak period, premium bus service would operate less frequent than the full LPA, but more frequently than No Build Alternative transit services.

### 6.1.3.3 Transfer Requirements

The number of transfers required to make a trip from an origin to a destination is one of the most important determinants of passenger convenience and comfort. Research shows that there are several reasons transfers decrease the attractiveness of a transit service. First, the added time associated with transfers increases a passenger's overall trip time. Second, transfers between different transit lines often take place at bus stops that are unprotected from the elements and not suited to long waits. Third, there is a discomfort associated with uncertainty about the arrival of the vehicle being transferred to, specifically whether the vehicle will be early (and therefore missed by on-time arriving passengers), late, or will arrive at all. For the alternatives under

consideration in this document, the project team determined the minimum number of transfers necessary to travel between select O/D pairs (the same pairs analyzed for travel time effects). The results of this analysis are summarized below.

The proposed LPA would offer similar improvements in transfer requirements to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The proposed LPA would often provide a one-seat ride between origin and destination. Where transfers are required, they would be within the regional rapid transit system; therefore, perceived transfer "penalties" are mitigated by completely sheltered environments and the ability to transfer between lines without paying an additional fare or showing a transfer pass.

Proposed LPA Phase 1 would require at least one more transfer than the proposed LPA for trips with one end in the western part of the corridor and one end east of Wiehle Avenue. For these trips, proposed LPA Phase 1 would generally require the same number of transfers as transit services operating under the No Build Alternative, but in most cases would not require transfers between different service providers. For O/D pairs with both ends in the western end of the corridor, no transfers would be required.

#### 6.1.3.4 Transit Capacity

Transit capacity in the corridor represents the amount of physical space available to carry passengers and provides an understanding of the number of riders that can be comfortably accommodated in the corridor during peak travel times. This measure also provides an understanding of the level of service provided and how well transit supports the corridor's mobility needs. Total capacity would vary according to the number of vehicles in service and the capacity of each of those vehicles. Vehicle capacity, in turn, would vary based on vehicle size, policies regarding the level of acceptable vehicle loading, and the allowable number of standing passengers.

Transit capacity improvements under the proposed LPA would be similar to those for the Metrorail Alternative (T6/Y15) presented in the Draft EIS. Transit capacity in the corridor would increase relative to the No Build Alternative because the multiple-car rail trains in the proposed LPA would provide significantly higher capacity than the single buses providing service in the No Build. Furthermore, a single rail car has a higher capacity than a single bus.

East of Wiehle Avenue Station, proposed LPA Phase 1 would have similar improvements in transit capacity to the full LPA, in both the near-term and the long-term if the LPA is not implemented in its entirety, as proposed. At Wiehle Avenue Station, proposed LPA Phase 1 would provide greater increases in transit capacity, because in addition to Metrorail service at this station, all premium bus routes serving the western end of the corridor would connect to the station. West of Wiehle Avenue Station, proposed LPA Phase 1 would provide much less transit capacity than the full LPA because transit service would be provided via buses (i.e., single vehicles) rather than by multiple car trains. In 2025, proposed LPA Phase 1 would provide approximately 8 percent of the capacity of the full LPA west of Wiehle Avenue; however, Phase 1 would provide almost three times the capacity provided in the western end of the corridor under the No Build Alternative in 2025.

### 6.1.4 EFFECTS ON OPERATIONS AND MAINTENANCE COSTS

The operations and maintenance (O&M) costs associated with the proposed LPA design modifications are summarized below in Table 6.1-5, in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.1-5: Annual O&M Costs (2001 dollars in millions)**

| | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Metrorail | $514.24 | $586.38 | 0 | $586.38 | $554.4 | $501.5 |
| Metrobus | $2.04 | $0.83 | 0 | $0.83 | $0.83 | $0.83 |
| Fairfax Connector | $13.60 | $10.79 | 0 | $10.79 | $12.35 | $12.26 |
| Loudoun County | $3.65 | $3.4 | 0 | $3.4 | $3.4 | $3.4 |
| Premium Bus | n.a. | n.a. | n.a. | n.a. | $2.8 | $2.6 |
| TOTAL | $533.53 | $601.4 | 0 | $601.4 | $573.78 | $520.59 |

The O&M costs associated with the proposed LPA would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The proposed LPA would have an incremental annual cost over the No Build Alternative of $67.87 million (in 2001 dollars).

Because proposed LPA Phase 1 would have a shorter alignment, the O&M costs associated with proposed LPA Phase 1 would be lower than those for the proposed LPA up to the Wiehle Avenue Station. The increases in O&M costs for Fairfax Connector and premium bus service between the Wiehle Avenue Station and the western portion of the corridor would be outweighed by the decrease in Metrorail costs. The incremental annual O&M cost for proposed LPA Phase 1 relative to the No Build Alternative in 2025 would be approximately $40 million.

## 6.2 EFFECTS ON ROADWAYS

Because of the population and employment growth forecast for the metropolitan Washington, D.C. region, traffic is expected to consistently increase throughout the Dulles Corridor over the next ten to 20 years. Under the No Build Alternative, anticipated growth is expected to occur in a dispersed pattern of development, which would be highly auto-oriented, leaving people with few travel choices and resulting in widespread congestion. At many corridor intersections, travelers would experience substantial delays and very poor levels of service. The intent of the Dulles Corridor Rapid Transit Project is to provide travel choices for corridor residents and employees and to help focus anticipated growth in Fairfax and Loudoun counties into patterns that will increase the number of viable travel options available to corridor residents and employees, including transit, walking, and bicycling.

The proposed LPA would have similar effects on station area traffic to those described in the Draft EIS for the Metrorail Alternative (T6/Y15). The implementation of the proposed LPA, and, specifically the provision or expansion of park-and-ride and Kiss & Ride facilities, would result in increased traffic on local roadways around stations. Although the proposed LPA is not expected to substantially affect the operation of regional highway facilities or roadways outside of station areas, the proposed LPA would provide travel options and help to increase overall mobility in the corridor, the counties, and the region.

The following sections present more information on the potential long-term effects of the proposed LPA and proposed LPA Phase 1 on regional and corridor roadways. Forecast levels of service and delay are discussed relative to those presented for the No Build and Metrorail (T6/Y15) alternatives presented in the Draft EIS.

### 6.2.1 REGIONAL HIGHWAY OPERATIONS

The No Build Alternative would have no project-related effects on regional highway operations. Specific transportation improvements included in the No Build Alternative will undergo a separate evaluation and environmental review process.

The effects of the design modifications made to the proposed LPA on regional highway operations would be similar to the effects documented in Section 6.2.2 of the Draft EIS in that the implementation of either the proposed LPA or proposed LPA Phase 1 would have a negligible effect on regional highway volumes. Given that the change in traffic volumes would be small, it is expected that the increase in transit ridership associated with the proposed LPA and proposed LPA Phase 1 would have very little effect on vehicle-trip reduction at the regional level.

Regional travel times under the proposed LPA, including proposed LPA Phase 1, would be similar to those in Section 6.1.1 of the Draft EIS, since there would be no changes to the No Build Alternative.

### 6.2.2 LOCAL TRAFFIC OPERATIONS

Due to design modifications associated with the proposed LPA, the potential long-term traffic effects of the proposed LPA and proposed LPA Phase 1 for the West Falls Church, Tysons West, Wiehle Avenue, Reston Parkway, Route 606, and Route 772 stations would be different than those described in the Draft EIS and are assessed below. The effects to the Tysons East, Tysons Central 123, Tysons Central 7, Reston Parkway, Route 28, and Dulles Airport stations would be similar to those presented in the Draft EIS for the Metrorail Alternative (T6/Y15).

The following analysis is based on existing data and assumed vehicle occupancies which approximate the level of activity at the following stations.

#### 6.2.2.1 West Falls Church Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative. Passenger mode of arrival was modeled for the 2025 No Build Alternative since this station already exists on the Metrorail Orange Line.

Table 6.2-1 presents peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the West Falls Church Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-1: Peak-Hour Person-Trips Generated at West Falls Church by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | 885 | 593 | +21 | 614 | 595 | 524 |
| Kiss & Ride | 516 | 410 | +1 | 411 | 390 | 376 |
| Bus | 2,312 | 187 | +1 | 188 | 245 | 180 |

As documented in the Draft EIS, levels of service (LOS) in the West Falls Church station area ranged from LOS A to LOS F during the a.m. and p.m. peak hour for the No Build and Metrorail (T6/Y15) alternatives. Based on the worst-case intersection for the No Build Alternative, intersection delay would be 118 seconds in the a.m. peak hour and 108 seconds in the p.m. peak hour, while delays under the Metrorail Alternative (T6/Y15) would be 106 and 104 seconds for the a.m. and p.m. peak hours, respectively, at the same intersection.

Based on the mode of arrival data presented in Table 6.2-1, the effects of the proposed LPA, including proposed LPA Phase 1, would be similar to those presented in the Draft EIS for 2025 and 2009 for this station. The marginal increases in park-and-ride and Kiss & Ride trips in 2025 between the proposed LPA and the Metrorail Alternative (T6/Y15) would be minor and would not result in additional project-related traffic impacts in the West Falls Church Station area. The decrease in trips under proposed LPA Phase 1 in 2009 would be the result of less ridership forecast for this station.

#### 6.2.2.2 Tysons West Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative.

The proposed LPA design modifications include the elimination of the 2,000-space parking structure at the Tysons West Station. In its place, a 500-space parking structure would be constructed by 2009 by others as a joint development. Table 6.2-2 presents the peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the Tysons West Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-2: Peak-Hour Person-Trips Generated at Tysons West by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | n.a. | 736 | -670 | 66 | 52 | 78 |
| Kiss & Ride | n.a. | 89 | +130 | 219 | 240 | 185 |
| Bus | n.a. | 132 | +20 | 152 | 115 | 89 |

As documented in the Draft EIS, levels of service for the Tysons West Station area for the No Build and Metrorail (T6/Y15) alternatives, ranged from LOS A to LOS F for the a.m. and p.m. peak hours. The most significant delay of 478 seconds would be experienced in the p.m. peak hour at the intersection of Route 7 and Spring Hill Road, however, under the No Build Alternative, the delay would be 467 seconds at the same intersection.

Based on the mode of arrival data presented in Table 6.2-2, the reduction in parking capacity at this station would result in a considerable decrease in project-related trips at the Tysons West Station for all years. However, this reduction would not necessarily result in significant improvements to traffic impacts, over those presented in the Draft EIS for the Metrorail Alternative (T6/Y15), since the background traffic volumes (i.e., traffic conditions without the project) would remain extremely heavy near the station area. Kiss & Ride (drop-off) trips would increase slightly in 2025 and 2009 due to the reduction in parking capacity. For all years, access to the site from Tyco Road should improve marginally since less vehicular traffic would be accessing the station. Note also that the morning peak hour for access to the stations will likely precede any peak traffic for access to

adjoining and nearby developments. Based on experience for the existing Metrorail system, park-and-ride facilities for stations will likely be full by 8 a.m., and more likely earlier.

#### 6.2.2.3 Wiehle Avenue Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative. Additionally, since the Wiehle Avenue Station would not exist under the No Build Alternative, passenger mode of arrival was not modeled for this alternative.

This section presents the long-term traffic effects of the proposed LPA and proposed LPA Phase 1 on the Wiehle Avenue Station area. Table 6.2-3 presents the peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the Wiehle Avenue Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-3: Peak-Hour Person-Trips Generated at Wiehle Avenue by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | n.a. | 864 | +27 | 891 | 650 | 773 |
| Kiss & Ride | n.a. | 131 | +9 | 140 | 181 | 139 |
| Bus | n.a. | 362 | +11 | 373 | 1,050 | 728 |

As documented in the Draft EIS, levels of service in the Wiehle Avenue Station area would range from LOS C in the a.m. and p.m. peak hour at the entrance to the station, to LOS F with the most significant delay of 151 seconds in the a.m. peak hour at the intersection of Wiehle Avenue and Sunrise Valley Drive. The delay at the same intersection under the No Build Alternative would be 145 seconds.

Based on the mode of arrival data presented in Table 6.2-3, the 2025 park-and-ride person-trips that would be generated at the station under the proposed LPA and proposed LPA Phase 1 are expected to change minimally compared to the Metrorail Alternative. Therefore, it can be assumed that the general traffic impacts expected in the vicinity of the station area would be similar to those documented in the Draft EIS for the Metrorail Alternative (T6/Y15).

Additional premium bus service would be implemented in the corridor in 2009. The operating plan for premium bus service is discussed in the following section. Since Wiehle Avenue would be the terminal station for proposed LPA Phase 1, park-and-ride and bus person-trips generated at the station would increase in both 2025 and 2009. Since the majority of cars and buses would be arriving at the station via the DIAAH and Dulles Toll Road, traffic volumes generated at the station would increase significantly during the peak hour at the Wiehle Avenue Station entrance for proposed LPA Phase 1. As a result, levels of service and delay are expected to deteriorate at this station entrance in 2009 and in future years if the full LPA is not constructed. Furthermore, the excessive delay may cause extensive queuing thus making movements from the westbound Dulles Toll Road ramp to the northbound Wiehle Avenue approach difficult. The additional cars and buses entering the station via Isaac Newton Drive would have a negligible effect on traffic operations.

### 6.2.2.4 Herndon-Monroe Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative. Additionally, since the Herndon-Monroe Station would not exist under the No Build Alternative, passenger mode of arrival was not modeled for this alternative.

This section presents the long-term traffic effects of the proposed LPA and proposed LPA Phase 1 at the Herndon-Monroe Station. Table 6.2-4 presents the peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the Herndon-Monroe Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-4: Peak-Hour Person-Trips Generated at Herndon-Monroe by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | n.a. | 1,311 | -89 | 1,222 | 693 | 338 |
| Kiss & Ride | n.a. | 204 | +7 | 211 | 220 | 118 |
| Bus | n.a. | 330 | +5 | 335 | 38 | 21 |

As documented in the Draft EIS for the Metrorail Alternative (T6/Y15), levels of service in the Herndon-Monroe Station area would range from LOS B in the a.m. and p.m. peak hour at the intersection of the Fairfax County Parkway and Sunset Hills Road, to LOS F with a delay of 224 seconds in the p.m. peak hour at the intersection of Sunrise Valley Drive and Roark Drive, the entrance to the Herndon-Monroe Station, under the Metrorail Alternative (T6/Y15). Under the No Build Alternative, the intersection delay would be 27 seconds.

With the design modifications, the effects of the proposed LPA would be similar to those presented for the Metrorail Alternative (T6/Y15) in the Draft EIS. However, if the full LPA is not constructed, 2,450 parking spaces would be constructed at the station by 2025 to accommodate increased demand for transit services in the corridor.

### 6.2.2.5 Route 606 Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative. Additionally, since this station would not exist under the No Build Alternative, passenger mode of arrival was not modeled for the alternative.

This section presents the long-term traffic effects of the proposed LPA and proposed LPA Phase 1 in the Route 606 Station area. Table 6.2-5 presents the peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the Route 606 Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-5: Peak-Hour Person-Trips Generated at Route 606 by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | n.a. | 1,651 | -826 | 825 | 726 | 669 |
| Kiss & Ride | n.a. | 15 | 0 | 15 | 16 | 27 |
| Bus | n.a. | 44 | 0 | 44 | 102 | 82 |

As documented in the Draft EIS for the Metrorail Alterative (T6/Y15), levels of service in the Route 606 Station area would range from LOS B at the south station entrance in the a.m. and p.m. peak hours, to LOS F with a delay of 454 seconds at the intersection of Route 606 and Route 789 in the a.m. peak hour. Under the No Build Alternative, the delay at this intersection would be 345 seconds.

Based on the mode of arrival data presented in Table 6.2-5, the project-related traffic effects of the proposed LPA and proposed LPA Phase 1 are anticipated to be significantly less than those presented in the Draft EIS for the Metrorail Alternative (T6/Y15), due to a reduction in parking capacity at the Route 606 Station. However, this reduction would not necessarily result in significant improvements to traffic impacts, over those presented in the Draft EIS for the Metrorail Alternative (T6/Y15), since the background traffic volumes (i.e., traffic conditions without the project) would remain extremely heavy near the station area. For proposed LPA Phase 1 in 2025 and 2009, the increase in bus trips at the station would be attributable to the lack of Metrorail service in this station area.

#### 6.2.2.6 Route 772 Station

The No Build Alternative would continue current conditions; therefore there would be no project-related effects to traffic operations for this alternative.

This section presents the long-term traffic effects of the proposed LPA and proposed LPA Phase 1 in the Route 772 Station area. Table 6.2-6 presents the peak hour park-and-ride, Kiss & Ride (drop-off), and bus person-trips that would be generated at the Route 772 Station under the proposed LPA and proposed LPA Phase 1 in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.2-6: Peak-Hour Person-Trips Generated at Route 772 by Mode and Alternative**

| Mode of Arrival | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Park-and-Ride | n.a. | 0 | +1,344 | 1,344 | n.a. | n.a. |
| Kiss & Ride | n.a. | 79 | -19 | 60 | 111 | 90 |
| Bus | n.a. | 176 | -37 | 139 | 142 | 69 |

As documented in the Draft EIS for the Metrorail Alternative (T6/Y15), levels of service in the Route 772 Station area would range from LOS A at the south station entrance for the a.m. and p.m. peak hours, to LOS C in the p.m. peak hour at the north station entrance. These station facilities would not exist under the No Build Alternative.

The proposed LPA design modifications include the provision of park-and-ride facilities on both sides of the Dulles Greenway, totaling 3,300 parking spaces. With these improvements, the long-term traffic effects in this station area would be similar to those documented in the Draft EIS for the Metrorail Alternative (T6/Y15). The future parking facility access road discussed in the Draft EIS would be of sufficient capacity to accommodate a relatively high volume of traffic.

No facilities would be provided at this station under proposed LPA Phase 1, rather a Route 772 stop would be placed in the future station vicinity along new streets expected to be provided by the site's developer by 2009. Bus traffic would be similar to that anticipated for the proposed LPA, and roads are expected to be sufficient of capacity to handle this volume of transit service.

### 6.2.3 TRAFFIC MITIGATION

Table 6.2-7 presents a summary of potential traffic mitigation measures that could be used to minimize the effects associated with the proposed LPA and proposed LPA Phase 1 in relation to the Metrorail Alternative (T6/Y15). Coordination between WMATA and VDOT with respect to proposed mitigation measures is on going.

For all other station areas, proposed mitigation measures would be similar to those documented in Section 6.2.5 of the Draft EIS. Table 6.2-7 presents the proposed mitigation measures for all stations areas in the corridor where mitigation would be warranted. Since the opening years for the alternatives have changed since the publication of the Draft EIS, some mitigation measures may be warranted in 2015 and 2009 for proposed LPA and LPA Phase 1 instead of in 2010, as originally documented in the Draft EIS for the Metrorail Alternative (T6/Y15). Proposed mitigation measures include the addition of turn lanes and/or through lanes at various locations along the corridor. Moreover, the high-density, mixed-use development in most station areas would enhance accessibility to transit, walking, and biking, further reducing single-occupancy vehicle travel volumes.

**Table 6.2-7: Summary of Traffic Issues and Proposed Mitigation Options**

| Station | Traffic Issue(s) | Proposed Mitigation | Alternative | Required By |
|---|---|---|---|---|
| Tysons East | ▪ Insufficient capacity for NB left turns at Old Meadow Road/Route 123. | ▪ Add second NB left turn lane. | ▪ Metrorail (T6/Y15), LPA, LPA Phase 1 | ▪ 2009 |
| Wiehle Avenue | ▪ Insufficient capacity on the EB approach at Wiehle Avenue and Sunset Hills Road. | ▪ Add an EB right turn lane on Sunset Hills Road. | ▪ Metrorail (T6/Y15), LPA, LPA Phase 1 | ▪ 2009 |
| | ▪ Insufficient capacity on the WB approach at Wiehle Avenue and Sunrise Valley Drive. | ▪ Add WB right turn lane on Sunrise Valley Drive. | ▪ Metrorail (T6/Y15), LPA, LPA Phase 1 | ▪ 2009 |
| Reston Parkway | ▪ Insufficient capacity at the WB Dulles Toll Road Ramp and Reston Parkway intersection. | ▪ Add a NB left turn lane on Reston Parkway. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity at EB Dulles Toll Road ramp and Reston Parkway intersection. | ▪ Add NB through lane on Reston Parkway. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity for EB movements at Sunset Hills Road/Reston Parkway. | ▪ Construct an additional EB right turn lane on Sunset Hills Road. | ▪ Metrorail (T6/Y15), LPA | ▪ 2015 |

| Station | Traffic Issue(s) | Proposed Mitigation | Alternative | Required By |
|---|---|---|---|---|
| | ▪ Insufficient capacity for the SB and NB movements at Sunrise Valley Drive/Reston Parkway. | ▪ Construct an additional NB through lane and an additional SB right turn lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity on the EB approach at Sunset Hills Drive/Town Center Parkway | ▪ Construct an additional EB left turn lane on Sunset Hills Road. | ▪ Metrorail (T6/Y15), LPA | ▪ 2015 |
| Herndon-Monroe | ▪ Insufficient capacity on the NB and SB approaches to the WB Dulles Toll Road ramp/Fairfax County Parkway. | ▪ Construct an additional through lane on the NB and SB approaches. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity for the NB, SB, and WB approaches to Monroe Street/Van Buren Street from Herndon Parkway. | ▪ Construct an EB right turn lane on Herndon Parkway. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity for SB movements at Fox Mill Road/Sunrise Valley Drive and Monroe Street. | ▪ Construct a SB left turn lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2015 |
| | ▪ Insufficient capacity on the EB and WB approaches at Sunrise Valley Drive/Roark Drive. | ▪ Construct an additional EB and WB through lane on Roark Drive. | ▪ Metrorail (T6/Y15), LPA | ▪ 2015 |
| Route 28 | ▪ Insufficient capacity for NB movements at Centreville Road/Worldgate Drive. | ▪ Construct an additional NB through lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity for WB movements at the Dulles Airport Toll Road WB Ramp/Centreville Road. | ▪ Construct an additional WB right turn lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity for EB movements at the Dulles Airport Toll Road EB Ramp/Centreville Road. | ▪ Construct an exclusive EB right turn lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| | ▪ Insufficient capacity on all approaches at Herndon Parkway/Centreville Road. | ▪ Construct exclusive right turn lanes on all approaches; construct an additional exclusive left turn lane on the NB and EB approaches. | ▪ Metrorail (T6/Y15), LPA | ▪ 2025 |
| Route 606 | ▪ Insufficient capacity at the station entrance and Route 789. | ▪ Modify lane configuration to include an exclusive left turn lane. | ▪ Metrorail (T6/Y15), LPA | ▪ 2015 |

## 6.3 EFFECTS ON OTHER TRANSPORTATION FACILITIES AND SERVICES

Other transportation facilities and services in the corridor include parking, bicycle and pedestrian facilities, and air transportation services at Dulles Airport. This section presents the potential long-term effects of the proposed LPA and proposed LPA Phase 1 on each of these facilities and services, relative to the No Build and Metrorail (T6/Y15) alternatives presented in the Draft EIS.

### 6.3.1 PARKING

Table 6.3-1 presents the planned parking capacity at the proposed stations throughout the Dulles Corridor associated with the proposed LPA design modifications in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15).

**Table 6.3-1: Existing and Planned Parking Capacity for the Dulles Corridor Rapid Transit Project**

| Park-and-Ride Stations | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Tysons West | – | 2,000 | -1,500 | 500 | 500 | 500 |
| Wiehle Avenue | – | 2,300 | 0 | 2,300 | 2,300 | 2,300 |
| Herndon-Monroe | 1,750 | 3,500 | 0 | 3,500 | 2,450 | 1,750 |
| Route 28 | – | 2,000 | 0 | 2,000 | – | – |
| Route 606 | 750 | 4,750 | -2,000 | 2,750 | 2,200 | 1,580 |
| Route 772 | – | 0 | +3,300 | 3,300 | – | – |
| **TOTAL** | **2,500** | **14,550** | **-200** | **14,350** | **7,450** | **6,130** |

The effects of the No Build Alternative would be similar to those discussed in the Draft EIS. There would be no project-related effects to parking from the alternative.

Parking levels under the proposed LPA would be similar to those for the Metrorail Alternative (T6/Y15) presented in the Draft EIS. Total parking for the proposed LPA would be approximately 200 spaces fewer than for the Metrorail Alternative. Parking capacity at Tysons West would be reduced from the 2,000 spaces under the Metrorail Alternative (T6/Y15) to 500 spaces. These spaces would be constructed by others as part of joint development at the station. Additionally, parking capacity at the Route 606 Station has been reduced from almost 5,000 spaces under the Metrorail Alternative (T6/Y15) to 2,750 spaces for the proposed LPA. Parking capacity has also been added to the north and south sides of the Dulles Greenway at the Route 772 Station (3,300 spaces total).

For proposed LPA Phase 1, parking levels would be far less than those for the full LPA. East of and including Wiehle Avenue Station, the park-and-ride capacity provided by proposed LPA Phase 1 would be the same as that provided by the proposed LPA, but west of Wiehle Avenue Station substantially less capacity would be provided. Overall, proposed LPA Phase 1 would provide 40 percent of the parking capacity for the full LPA. If the proposed LPA is not implemented in its entirety, park-and-ride capacity would be increased at Herndon-Monroe to 2,450 spaces and at Route 606 to 2,200 spaces to meet the increased demand for transit services in the corridor. By 2025, capacity would be approximately 52 percent of the capacity for the full LPA.

### 6.3.2 BICYCLE AND PEDESTRIAN FACILITIES

The implementation of the design changes to the proposed LPA, including proposed LPA Phase 1, would have no additional effects on the existing and planned bicycle and pedestrian facilities in the Dulles Corridor, as discussed in Section 6.4.2 of the Draft EIS for the Metrorail Alternative (T6/Y15).

### 6.3.3 AIR TRANSPORTATION

The implementation of the design changes to the proposed LPA, including proposed LPA Phase 1, would have no additional effects on air transportation at Dulles Airport, as discussed in Section 6.4.3 of the Draft EIS for the Metrorail Alternative (T6/Y15).

## 6.4 CONSTRUCTION EFFECTS

This section presents the potential construction effects of the proposed LPA and proposed LPA Phase 1 on regional and corridor transportation systems. Implementation of the Dulles Corridor Rapid Transit Project would result in some disruptions to the operation of the transit and highway facilities in the corridor. The short-term transportation effects that would result from construction of the proposed LPA would be similar to and include those described in Section 6.5 of the Draft EIS for the Metrorail Alternative (T6/Y15). The terms "minimal" and "insignificant" impacts refer to limited off-peak construction periods or other work producing minor disturbances in the transportation system.

### 6.4.1 NO BUILD ALTERNATIVE

The No Build Alternative would continue current conditions; therefore there would be no project-related construction effects for this alternative.

### 6.4.2 PROPOSED LOCALLY PREFERRED ALTERNATIVE

The proposed LPA would merge with the Orange Line at a point between the East and West Falls Church Metrorail stations. This connection would require new special track work including turnouts and a double crossover on, and some realignment of, the existing Orange Line track. The Washington Metropolitan Area Transit Authority (WMATA) would be able to maintain Orange Line operations by single-tracking trains to implement such improvements. Bus service would be provided between East Falls Church and West Falls Church stations, and construction that would require closure of both tracks would be conducted overnight. This would most likely occur on weekends, when 12-minute headways can be maintained with no disruptions to passenger service. WMATA presently maintains a rail yard a few hundred yards north of the West Falls Church Metrorail Station, adjacent to I-66. There would be some internal modifications to accommodate the proposed LPA. These modifications would require taking some of the I-66 right-of-way. However, acquisition of this property and construction in this area would not affect current roadway operations or planned improvements for I-66.

The track leading from the WMATA yard to a point in the Dulles Connector Road median (roughly 1,000 feet north of the West Falls Church Station) would cross under the eastbound lanes of the Connector Road. Underground construction options will be evaluated as more detailed design develops. However, cut-and-cover may represent the best method of constructing the rail link from the yard to the median. A cut-and-cover technique would require building a Dulles Connector Road detour for the eastbound lanes, and could be accomplished during weekends and nighttime hours. Consequently, traffic impacts associated with construction of Metrorail tracks between the yard and the Dulles Connector median are expected to be prolonged but insignificant.

At the eastern edge of Tysons Corner, construction of the aerial structure transitioning from the Dulles Connector Road to Route 123 would require temporary lane closures during off-peak hours on both the Dulles Connector Road and Route 123.

In Tysons Corner, the proposed LPA would require 1.1 miles of underground structure (including the Tysons Central 7 Station). This underground section may be tunneled or may be excavated by cut-and-cover techniques, except at the underground station, which would be constructed with cut-and-cover techniques. Cut-and-cover construction would require lane closures that would disrupt traffic to a considerable extent. Along Route 7, the construction of the western portal for the underground section would require detouring the service roadways adjacent to Route 7.

Construction of feeder bus bays and Kiss & Ride facilities associated with the Tysons Corner area Metrorail stations is expected to have minimal impacts. Construction of Kiss & Ride and bus facilities on the south side of Route 123 at the Tysons East Station may require occasional lane closures on Route 123 and Colshire Road. Similarly, construction of the facilities at Tysons West Station could require occasional lane closures on Tyco Road. For these and all other stations in Tysons Corner, construction of pedestrian bridges would include periodic off-peak closures of eastbound and westbound lanes in the vicinity of stations.

Construction of the proposed LPA in the Mid-Corridor area would include road realignment in the vicinity of stations, and pedestrian bridge construction would occasionally close lanes in off-peak hours. In addition, implementation of the proposed LPA and proposed LPA Phase 1 would require the construction of a pocket track just west of the Wiehle Avenue Station, which would result in an additional three months disruption for road realignment.

The proposed LPA would include an underground alignment at Dulles Airport with a portal well north of the terminal so as not to interfere with airport traffic. However, construction would displace parking spaces close to the airport terminal, both during the decking operation prior to construction of the underground station and alignment, and then during that construction. The current assumption is that construction would proceed using cut-and-cover methods. Under this approach construction would affect parking, some vehicular and pedestrian traffic, and the Flight Signature Service facilities. Minor disruptions along the Metrorail alignment would be expected to continue for at least two years. The possibility of using conventional tunneling methods for construction of the underground alignment will be evaluated. Regardless of which method is selected for the underground alignment, the underground station would be constructed using cut-and-cover methods.

At the western end of the Dulles Airport section would be an aerial alignment and pocket track providing a connection between the airport grounds and the Dulles Greenway median. Construction of this aerial structure is not anticipated to impact Greenway operations except for minimal off-peak lane closures across eastbound lanes during work over those lanes.

Relocation of the lanes on the Dulles Greenway would be necessary around the Route 606 and Route 772 stations in Loudoun County and could cause some disruption of traffic. If the Dulles Greenway is realigned to accommodate stations prior to construction of the Route 606 and Route 772 stations, temporary lanes closures along the Greenway would not be needed during construction of these stations. Construction of pedestrian bridges to the median would have minimal impacts, because the lane closures would be in the off-peak period.

### 6.4.3 PROPOSED LPA PHASE 1

For proposed LPA Phase 1, the transportation effects of construction activities would be similar to those described for the proposed LPA east of and including Wiehle Avenue Station. The additional improvements at West Falls Church S&I Yard for Phase 1 would primarily occur on WMATA property. Those improvements that would occur on I-66 right-of-way acquired from the Virginia Department of Transportation (VDOT) would not affect current roadway operations or planned roadway improvements. West of the Wiehle Avenue Station, construction of facilities for premium bus service would have limited transportation impacts. The addition of parking near the Dulles North Transit Center would likely take place during off-peak periods and would not affect transit operations. In the long-term, if the proposed LPA is not implemented in its entirety, the expansion of parking at Herndon-Monroe Park-and-Ride and near Route 606 could cause temporary disruptions to access and roadways at these facilities.

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# 7 SECTION 4(f) EVALUATION

This chapter presents the potential long-term and construction effects to parklands and historic properties for the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1, and No Build Alternative of the Dulles Corridor Rapid Transit Project as they relate to the provisions of Section 4(f) of the U.S. Department of Transportation Act of 1966 (commonly referred to as Section 4(f)), and Section 6(f) of the U.S. Land and Water Conservation Funds Act of 1965 (commonly referred to as Section 6(f)). The Section 4(f) and Section 6(f) resources identified within the corridor include publicly owned parklands, historic resources, and archaeological sites. For the purposes of Section 4(f), a historic or archaeological site is considered significant if it is listed in or eligible for listing in the National Register of Historic Places (NRHP) or if it is of national, state, or local significance. Section 4(f) applies to archaeological sites that are in or eligible for inclusion in the NRHP and warrant preservation in place.

Changes in existing conditions since the publication of the Draft EIS are discussed, followed by an evaluation of potential effects, avoidance alternatives, and measures to minimize harm. For a detailed description of the analysis methodology, legal and regulatory context, and existing Section 4(f) and Section 6(f) resources within the corridor, please refer to Chapter 7 of the Draft EIS. In addition, a *Cultural Resources Technical Report (Phase Ia)* prepared and submitted to the Virginia Department of Historic Resources (VDHR) in August 2003, presents further detail on archaeological and architectural resources in the study area.

Two resources have been identified by VDHR since the Draft EIS and are considered in this Supplemental Draft EIS (44FX2662 and 44FX2405). Neither of the sites was found to be eligible for the NRHP. Because preservation in place would therefore not be required, Section 4(f) does not apply to these resources.

In addition, one architectural resource has been added (Hunter Mill Road Historic District). The Hunter Mill Road Historic District, which stretches along Hunter Mill Road from Baron-Cameron Road (Route 606) to Chain Bridge Road (Route 123), was designated a Virginia Scenic Byway subsequent to the publication of the Draft EIS. Archaeological and architectural resources along Hunter Mill Road have been identified as contributing elements to the historic district. The district is significant for a number of contributions to the history of Northern Virginia, including evidence of Native American sites, the milling and farming industries in Fairfax County, association with numerous Civil War activities and people, the development of public education in Fairfax County, and the original location of Cartersville, a community established by emancipated African-American slaves. The Hunter Mill Road Historic District has been deemed eligible for listing in the Virginia Landmarks Register and the NRHP and is therefore subject to the provisions of Section 4(f).

The parkland resources included in this analysis are the same as those evaluated under the provisions of Section 4(f) and Section 6(f) for the Metrorail Alternative (T6/Y15) in the Draft EIS.

## 7.1 POTENTIAL EFFECTS

The potential effects of the proposed LPA and proposed LPA Phase 1 on lands and properties protected under Section 4(f) and Section 6(f) are similar to those noted in Chapter 7 of the Draft EIS, except as noted below. A summary of Section 4(f) and Section 6(f) impacts associated with the proposed LPA and proposed LPA Phase 1 are described in relation to the No Build Alternative and the Metrorail Alternative (T6/Y15) in Table 7.1-1 below.

**Table 7.1-1: Project Effects on Section 4(f) and Section 6(f) Resources**

| Section 4(f) and Section 6(f) Resources | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 Opening Year | LPA Phase 1 2025 |
| Section 4(f) Constructive Use (No./Acre) | 0/0 | 0/0 | No change | 0/0 | 0/0 | 0/0 |
| Section 4(f) Direct Use (No./Acre) | 0/0 | 0/0 | No change | 0/0 | 0/0 | 0/0 |
| Section 6(f) Conversion of Use | No | 1 Potential[1] | No change | 1 Potential | 1 Potential | 1 Potential |

[1] These effects differ from those described in the Draft EIS for the Metrorail Alternative (T6/Y15) as a result of further coordination with NVRPA and refinement of the evaluation methodology.

### 7.1.1 NO BUILD ALTERNATIVE

The No Build Alternative would have no impacts to Section 4(f) or Section 6(f) resources.

### 7.1.2 PROPOSED LOCALLY PREFERRED ALTERNATIVE

Impacts to Section 4(f) and Section 6(f) resources from the proposed LPA are presented below.

#### A. Proposed Full LPA

As outlined in Table 7.1-1, the potential effects associated with the proposed LPA would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- **Site 44FX0388** no longer falls within the Areas of Potential Effect (APE) for archaeology; therefore, no impacts would occur to this Section 4(f) resource as a result of the proposed LPA.
- The proposed LPA would result in proximity impacts related to noise at the **Hunter Mill Road Historic District (029-5180)**. However, because the district is located adjacent to the Dulles International Airport Access Highway (DIAAH) and Dulles Toll Road, noise from Metrorail operations would not change overall noise levels in the district in such a way as to substantially impair this Section 4(f) resource.

  Likewise, the proposed LPA would result in visual impacts to the district from the construction of Metrorail tracks within the median of the DIAAH and two proposed stormwater ponds north and

south of the Dulles Toll Road on the west side of Hunter Mill Road. However, because of the district's location directly adjacent to the Dulles Toll Road and the disturbance of Hunter Mill Road in this area from the construction of the DIAAH and Dulles Toll Road, the proposed LPA would not have an adverse effect on the characteristics that make Hunter Mill Road significant.

Therefore, although proximity impacts to the district would occur, these impacts would not substantially impair this resource.

- **House (53-23), 22017 Shellhorn Road (Route 643), Ryan.** Since the publication of the Draft EIS, the Route 772 Station footprint has been reconfigured to be consistent with proposed development in the vicinity of the station site. Although the footprint of the proposed station facilities has been decreased and relocated closer to the Dulles Greenway, the station would still result in proximity impacts to the house. However, the house is presently abandoned and deteriorating, and the property has been compromised by the construction of commercial warehouses immediately east of the farm and the earlier construction of the Dulles Greenway to the south and west. Moreover, predicted noise and vibration levels do not exceed Federal Transit Administration (FTA) criteria at this property. Therefore, proximity impacts to the house would not substantially impair this Section 4(f) property.

As described in Chapter 7 of the Draft EIS, the Washington & Old Dominion (W&OD) Railroad Regional Park is a 45-mile long and 100-foot wide recreational trail that runs between Arlington County and Loudoun County. The trail crosses the DIAAH and Dulles Toll Road approximately one-half mile east of Wiehle Avenue. The trail is owned and maintained by the Northern Virginia Regional Park Authority (NVRPA) and is protected under both Section 4(f) of the U.S. DOT Act and Section 6(f) of the Land and Water Conservation Fund Act.

In relation to Section 4(f), no use or constructive use of this resource is anticipated. To avoid potential impacts to the Washington and Old Dominion (W&OD) Railroad Regional Park, the Virginia Department of Rail and Public Transportation (DRPT) has determined that it is possible to construct the new Metrorail bridges in compliance with the *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings* (August 1993). These guidelines describe minimum requirements for Elevation Open Area, height and width. DRPT will continue to coordinate with NVRPA to ensure that the design and construction is conducted in accordance with these guidelines.

In relation to Section 6(f) of the Land and Water Conservation Fund Act, the LPA could potentially require a conversion of use. Some of the funds used to acquire or develop this park were Land and Water Conservation Funds. In the 1960's, the federal government acquired an easement across the W&OD Railroad (prior to its conversion to parkland) for the Dulles Toll Road overpass. It has not yet been determined if the easement granted for the Dulles Toll Road (a highway use) would also apply to the transit use necessary for the Dulles Corridor Rapid Transit Project.

Representatives of the Virginia Department of Rail and Public Transportation (DRPT) will continue to coordinate with NVRPA to determine if implementation of the proposed LPA or proposed LPA Phase 1 would require a conversion of Section 6(f) lands.

If the proposed LPA were not constructed in its entirety, additional parking facilities would be built at the Herndon-Monroe and Route 606 stations to accommodate increased demand for premium bus service in the corridor. However, no Section 4(f) or 6(f) resources are located within the predicted limits of disturbance for these facilities, and no impact would occur.

### B. Proposed LPA Phase 1

Effects associated with proposed LPA Phase 1 in areas east of the Wiehle Avenue Station would be similar to those described in the Draft EIS for the Metrorail Alternative (T6/Y15), with the following exceptions:

- **Site 44FX0388** would be unaffected by LPA Phase 1 for the reasons discussed in Section 7.1.2 above.
- The **Hunter Mill Road Historic District (029-5180)** would experience no adverse effect from LPA Phase 1 for the reasons discussed in Section 7.1.2 above.

For areas located west of Wiehle Avenue, effects of proposed LPA Phase 1 on Section 4(f) and Section 6(f) resources would be similar to those described for the No Build Alternative in the Draft EIS.

Overall, proposed LPA Phase 1 would result in fewer proximity impacts than the proposed LPA because only 11.6 miles of Metrorail would be constructed under proposed LPA Phase 1, as opposed to the 23.1 miles of Metrorail that would be built under the full proposed LPA.

## 7.2 ALTERNATIVES CONSIDERED AND AVOIDANCE ALTERNATIVES

Several alternatives and alignments were evaluated for the Dulles Corridor Rapid Transit Project as summarized in Chapter 2 of this Supplemental Draft EIS and described in detail in Chapter 2 of the Draft EIS.

The No Build Alternative, the proposed LPA, and proposed LPA Phase 1 were evaluated in this Supplemental Draft EIS. Neither the proposed LPA nor proposed LPA Phase 1 would result in permanent or temporary use of Section 4(f) resources in the study area. No proximity impacts would occur that would substantially impair the use of these properties. Therefore, no avoidance alternatives were considered.

If it is determined that the proposed LPA or proposed LPA Phase 1 would require a conversion of Section 6(f) lands, avoidance alternatives would be developed and evaluated in the Final EIS for this project.

## 7.3 MEASURES TO MINIMIZE HARM

Neither the proposed LPA nor proposed LPA Phase 1 would result in a permanent or temporary use of any of the identified Section 4(f) resources in the study area.

Some proximity impacts would occur, but these impacts would not result in substantial impairment resulting in the use of the Section 4(f) resources. Measures to minimize potential harm to identified Section 4(f) resources in the study area are similar to those described in Section 7.6 of the Draft EIS.

Temporary construction effects associated with the proposed LPA at Pimmit Run Stream Valley Park, Scotts Run Stream Valley Park, Difficult Run Stream Valley Park, and the W&OD Railroad Regional Park would be mitigated through the use of best management practices (BMP's) to control stormwater and sediment and minimize disruption of regular park activities.

Continued access to the trails at Pimmit Run Stream Valley Park and Difficult Run Stream Valley Park would be maintained during hours of peak use. At the W&OD Railroad Regional Park, construction would be conducted in compliance with the *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings* (August 1993), and continued access to the park would be maintained during hours of peak use. Construction would be timed for low-use periods. If it is determined that the proposed

LPA or proposed LPA Phase 1 would require a conversion of Section 6(f) lands, mitigation measures would be developed and discussed with NVRPA.

## 7.4 CONCLUSION

Based on the evaluation conducted, neither the proposed LPA nor proposed LPA Phase 1 would result in a permanent or temporary use of any of the identified Section 4(f) resources in the study area. Proximity impacts would not substantially impair the use of the properties. The proposed LPA and proposed LPA Phase 1 incorporate measures to minimize proximity impacts to identified Section 4(f) resources.

## 7.5 AGENCY COORDINATION

Representatives of DRPT will continue to coordinate with NVRPA to ensure that design and construction are conducted in accordance with the *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings* (August 1993) and that adequate light and openness remain after construction of the Metrorail bridges.

Representatives of DRPT will also continue to coordinate with NVRPA to determine if implementation of the proposed LPA or proposed LPA Phase 1 would require a conversion of Section 6(f) lands.

Finally, on August 8, 2003, DRPT received a letter from the Advisory Council on Historic Preservation (ACHP) stating that no further consultation with ACHP regarding the impact of the project on cultural resources is necessary, unless circumstances change (see Appendix).

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# 8 FINANCIAL ANALYSIS

This chapter presents the financial analysis for the proposed Locally Preferred Alternative (LPA) and proposed LPA Phase 1. A detailed explanation of the capital funding plan, operating funding plan, and risks and uncertainties are provided in Chapter 8 of the Draft EIS.

## 8.1 FINANCIAL ANALYSIS OVERVIEW

The financial plan is similar to that presented for the Metrorail Alternative (T6/Y15) in the Draft EIS with the following exceptions:

- The capital costs of the proposed LPA have increased from $3.1 billion to $3.4 billion in year-of-expenditure (YOE) dollars due to additional escalation resulting from refinements to the implementation schedule. The capital cost estimate will be further refined as engineering and design progresses.
- Because of FTA guidance on Federal funding limitations and the timing of local funding ability, the Virginia Department of Rail and Public Transportation (DRPT) intends to construct the proposed LPA in two major phases. Initially, Metrorail service would be provided from the existing Orange Line (between the East Falls Church and West Falls Church stations) to Wiehle Avenue by 2009 (proposed LPA Phase 1) Metrorail service west of Wiehle Avenue to Dulles Airport and Loudoun County would be provided in the proposed Full LPA. Proposed LPA Phase 1 is scheduled to begin revenue service in 2009, and the proposed Full LPA is scheduled to begin revenue service by 2015.
- The capital funding plan for the proposed LPA would be the same as that presented in the Draft EIS for the Metrorail Alternative (T6/Y15), with the exception of a change in local funding sources. The Fairfax County contribution would be generated entirely by funds from the newly formed Dulles Corridor Transportation Improvement District rather than a combination of tax district funds and general obligation bonds.
- For proposed LPA Phase 1, the Federal funding assumptions have been changed to reflect an annual cap of $100 million per year on "New Starts" funding. The total contribution would comprise 50 percent of the total capital costs for proposed LPA and LPA Phase 1.
- Operations and maintenance (O&M) costs for the proposed LPA would be the same as those presented in the Draft EIS for the Metrorail Alternative (T6/Y15). The O&M costs of proposed LPA Phase 1 reflect the cost for Metrorail operations from Wiehle Avenue east to the Orange Line and premium bus service to points west of Wiehle Avenue.

## 8.2 CAPITAL FUNDING PLAN

This section presents an overview of the Project's capital plan. It describes the funding sources that would be used by each funding partner and outlines a capital funding plan for the proposed LPA and LPA Phase 1.

## 8.2.1 PROPOSED LOCALLY PREFERRED ALTERNATIVE

The estimated capital costs and capital funding plans for the proposed LPA are described below.

### A. Proposed Full Locally Preferred Alternative

Table 8.2-1 summarizes the annual capital cost estimate for the proposed LPA that was developed using FTA's cost estimation guidelines and methodologies. The total estimated capital cost of the proposed LPA is $3.4 billion (YOE), which includes approximately $1.5 billion (YOE) for LPA Phase 1 and $1.9 billion (YOE) for the remainder of the full LPA. These estimates do not include the cost of financing for delays or annual shortfalls in Federal funding. Capital costs were estimated in second quarter Year 2001 dollars, and then escalated to fiscal YOE dollars to more accurately reflect the costs of construction when it would actually occur. This approach is consistent with that presented in the Draft EIS. All references to fiscal year (FY) refer to DRPT and Washington Metropolitan Area Transit Authority's (WMATA) fiscal year (July 1 through June 30). Escalated costs were calculated using an annual inflation rate of 2.0 percent for 2001 and 2002, and 3.0 percent for 2003 and beyond. This cost estimate reflects the total Project costs including Preliminary Engineering for the full LPA, project development, right-of-way acquisition, site preparation, facilities construction, vehicles, purchase and installation of systemwide facilities and equipment, restoration of adjacent infrastructure, engineering and design, construction management, owner administration, taxes and contractor bonding, contingencies, and special condition costs.

The capital funding partners for the proposed LPA would be similar to that developed for the Metrorail Alternative (T6/Y15) in the Draft EIS. FTA, the Commonwealth of Virginia, Fairfax County, Loudoun County and the Metropolitan Washington Airports Authority (MWAA) would provide capital funding for the proposed LPA. The non-Federal partners have agreed to contribute a portion of the capital costs that is relative to the benefits received through the Project's implementation. These funding partners have also participated in the Project's planning and design, and will be a key part of the future implementation activities.

The capital funding sources and allocations for the proposed LPA would be similar to those described for the Metrorail Alternative (T6/Y15) in the Draft EIS, with the exception of a change in one local jurisdiction's funding sources. Fairfax County now intends to fund its entire capital contribution from revenues generated by a newly-created Dulles Corridor Transportation Improvement District, rather than a combination of funds from this transportation improvement district and general obligation bonds. Table 8.2-2 presents the capital funding sources and their respective share of total capital costs for the proposed LPA. This allocation of capital funding reflects the current status of ongoing discussions among the non-Federal funding partners. The share of capital funding proposed for each jurisdiction is approximate, pending the completion of a final cost allocation agreement. That allocation agreement would outline the level and timing of funding required from each jurisdiction, and would be used to support the negotiation of a Full Funding Grant Agreement (FFGA) with FTA.

**Table 8.2-1 Capital Cost Estimate And Schedule – Proposed Full LPA (Millions YOE Dollars)**

| Cost Category | Total | FY03 | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 | FY 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Guideway** | $ 739.2 | $ - | $ 9.4 | $ 25.6 | $ 67.4 | $ 89.4 | $ 87.1 | $ 35.9 | $ 40.7 | $ 75.1 | $ 84.3 | $ 93.5 | $ 83.9 | $ 42.0 | $ 4.9 |
| **Yard & Shops** | $ 189.8 | $ - | $ 0.8 | $ 2.6 | $ 6.5 | $ 10.2 | $ 10.6 | $ - | $ 13.9 | $ 51.0 | $ 36.2 | $ 27.2 | $ 22.7 | $ 8.2 | $ - |
| **Systems** | $ 326.1 | $ - | $ 3.5 | $ 11.6 | $ 27.4 | $ 39.5 | $ 43.6 | $ 18.3 | $ 5.9 | $ 16.1 | $ 26.0 | $ 33.2 | $ 51.1 | $ 37.4 | $ 12.4 |
| **Passenger Stations** | $ 662.3 | $ - | $ 8.0 | $ 21.6 | $ 57.7 | $ 74.4 | $ 79.4 | $ 43.7 | $ 35.7 | $ 65.8 | $ 56.3 | $ 79.3 | $ 97.1 | $ 38.9 | $ 4.3 |
| **Vehicles** | $ 500.8 | $ - | $ - | $ - | $ 7.9 | $ 50.1 | $ 111.0 | $ 112.6 | $ 6.1 | $ 46.3 | $ 60.7 | $ 67.0 | $ 32.2 | $ 7.1 | $ - |
| **Special Conditions** | $ 104.9 | $ - | $ 4.9 | $ 12.0 | $ 11.9 | $ 7.7 | $ 12.0 | $ 20.5 | $ 8.0 | $ 2.7 | $ 6.9 | $ 11.2 | $ 5.6 | $ 1.5 | $ - |
| **Right-of-Way** | $ 164.4 | $ - | $ - | $ - | $ 30.7 | $ 47.4 | $ - | $ - | $ 34.0 | $ 52.5 | $ - | $ - | $ - | $ - | $ - |
| **Soft Costs*** | $ 696.5 | $ 46.0 | $ 34.5 | $ 37.1 | $ 48.8 | $ 54.7 | $ 67.8 | $ 77.8 | $ 32.7 | $ 55.5 | $ 57.5 | $ 61.5 | $ 63.4 | $ 46.5 | $ 12.6 |
| **Total** | **$3,384.1** | **$ 46.0** | **$ 61.1** | **$ 110.6** | **$ 258.3** | **$ 373.2** | **$ 411.5** | **$ 308.8** | **$ 177.1** | **$ 365.0** | **$ 327.8** | **$ 372.9** | **$ 356.0** | **$ 181.6** | **$ 34.2** |

*Soft costs include Preliminary Engineering and Final Design, Design Allowances, Project Insurance, Construction Management, Project Management, Agency Costs, Change Order Contingencies, and System Training, Start-up, and Testing.

**Table 8.2-2 Sources Of Capital Funding – Proposed Full LPA (Millions YOE Dollar)**

| Sources of Funds | Funding Level | Funding Share |
|---|---|---|
| Federal Sources | | |
| 5309 New Starts | $1,692.1 | 50.0% |
| **Total Federal Funds** | **$1,692.1** | **50.0%** |
| Non-Federal Sources | | |
| Commonwealth Transportation Fund Sub-Accounts* | $8.0 | 0.2% |
| Virginia Transportation Act of 2000 | $75.0 | 2.2% |
| Dulles Toll Road Revenues | $768.7 | 22.7% |
| Dulles Corridor Transportation Improvement District | $539.2 | 15.9% |
| Loudoun County Public Transportation Fund | $2.2 | 0.1% |
| Loudoun County BPOL Bonds | $160.2 | 4.7% |
| MWAA Passenger Facility Charges | $138.7 | 4.1% |
| **Total Non-Federal Funds** | **$1,692.0** | **50.0%** |
| **Total Project Budget** | **$3,384.1** | **100.0%** |

* Commonwealth Mass Transit Capital Fund and Northern Virginia Transportation District Fund; these funds are allocated to the Commonwealth of Virginia ($2 million) and Fairfax County ($6 million), respectively.

## B. Proposed LPA Phase 1

The estimated capital cost for the proposed LPA Phase 1 is approximately $1.5 billion. The annual capital costs are shown in Table 8.2-3.

The capital funding partners and funding sources for proposed LPA Phase 1 would be similar to those presented for the LPA with two exceptions. The funding plan for proposed LPA Phase 1 would not include capital funding from Loudoun County or the Metropolitan Washington Airports Authority (MWAA). The Federal share of funding for proposed LPA Phase 1 would be 50 percent. The remaining 50 percent would be funded through a combination of funds from the Commonwealth of Virginia (25 percent) and the Dulles Corridor Transportation Improvement District in Fairfax County (25 percent). The capital funding sources are presented in Table 8-2.4.

**Table 8.2-3 Capital Cost Estimate And Schedule – Proposed LPA Phase 1 (Millions YOE Dollars)**

| Cost Category | Total | Thru FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|---|---|---|---|---|---|---|---|
| Guideway | $301.3 | $ – | $9.4 | $25.6 | $67.4 | $89.4 | $87.1 | $22.4 |
| Yard & Shops | $30.6 | $ – | $0.8 | $2.6 | $6.5 | $10.2 | $10.6 | $0.0 |
| Systems | $144.0 | $ – | $3.5 | $11.6 | $27.4 | $39.5 | $43.6 | $18.3 |
| Passenger Stations | $272.9 | $ – | $8.0 | $21.6 | $57.7 | $74.4 | $79.4 | $31.8 |
| Vehicles | $281.5 | $ – | $0.0 | $0.0 | $7.9 | $50.1 | $111.0 | $112.6 |
| Special Conditions | $63.1 | $ – | $4.9 | $12.0 | $11.9 | $7.7 | $12.0 | $14.6 |
| Right-of-Way | $78.0 | $ – | $0.0 | $0.0 | $30.7 | $47.4 | $0.0 | $0.0 |
| Soft Costs* | $320.8 | $46.0 | $34.5 | $37.1 | $48.8 | $54.7 | $52.6 | $47.1 |
| TOTALS | **$1,492.2** | **$46.0** | **$61.1** | **$110.6** | **$258.3** | **$373.2** | **$396.2** | **$246.8** |

*Soft costs include Preliminary Engineering and Final Design, Design Allowances, Project Insurance, Construction Management, Project Management, Agency Costs, Change Order Contingencies, and System Training, Start-up, and Testing.

This allocation of capital funding reflects the current status of ongoing discussions among the non-Federal funding partners. The share of capital funding proposed for each jurisdiction is approximate, pending the completion of a final cost allocation agreement. That allocation agreement would outline the level and timing of funding required from each jurisdiction, and would be used to support the negotiation of a FFGA with FTA. Prior to FTA approval of an FFGA for the proposed LPA Phase 1, each funding partner must take the steps necessary to fully commit the funding through their respective legislative or administrative processes.

The status of capital funding for the design and construction of the proposed LPA Phase 1 is summarized below by funding source:

- **FTA "New Starts" Funding.** Through FY 2003, a total of $143.5 million in Section 5309 New Starts funding has been appropriated for the Project to support the Project's planning, environmental review, and engineering activities. Another $25 million in New Starts funding is included in the current FY 2004 Department of Transportation Appropriations bills now pending in Congress. DRPT has requested that $600 million in additional New Starts funding be authorized for the Project in the upcoming transportation reauthorization.
- **Virginia Transportation Act of 2000.** This legislation provided additional funding sources to accelerate the construction of priority transportation projects throughout the Commonwealth. It created the Priority Transportation Fund and authorized the Commonwealth Transportation Board (CTB) to issue Federal Reimbursement Anticipation Notes (FRANs). A total of $75 million in FRAN revenues have been allocated to the Project and are programmed in the *Virginia Transportation Six-Year Improvement Program, Fiscal Years 2004-2009.*

**Table 8.2-4 Sources Of Capital Funding – Proposed LPA Phase 1 (Millions YOE Dollars)**

| Source | Funding Level | Funding Share |
|---|---|---|
| Federal Sources | | |
| 5309 New Starts | $746.1 | 50.0% |
| Total Federal Funds | **$746.1** | **50.0%** |
| Non-Federal Sources | | |
| Commonwealth Transportation Fund Sub-Accounts* | $8.0 | 0.5% |
| Virginia Transportation Act of 2000 | $75.0 | 5.0% |
| Dulles Toll Road Revenues | $296.6 | 19.9% |
| Dulles Corridor Transportation Improvement District | $366.5 | 24.6% |
| Total Non-Federal Funds | **$746.1** | **50.0%** |
| TOTAL PHASE 1 BUDGET | **$1,492.2** | **100.0%** |

Commonwealth Mass Transit Capital Fund and Northern Virginia Transportation District Fund; these funds are allocated to the Commonwealth of Virginia ($2 million) and Fairfax County ($6 million), respectively.

- **Dulles Toll Road Revenues.** In September 2001, the CTB directed that a minimum of 85 percent of available revenues be dedicated to public transportation initiatives in the Dulles Corridor. In the *Virginia Transportation Six-Year Improvement Program, Fiscal Years 2004-2009*, $72.2 million in future available Dulles Toll Road revenues were allocated to support the Project and bus service in the corridor. To fully fund the Commonwealth's capital contribution, a toll increase on the Dulles Toll Road is proposed. Based on an initial analysis of current traffic and growth projections, a toll of $0.75 at the main toll plaza and $0.50 at each interchange ramp toll plaza provides sufficient revenues to meet the Commonwealth's obligations for the proposed LPA Phase 1. A final decision on the amount and timing of any toll increase would be made by the Commonwealth Transportation Board (CTB) after the completion of a formal traffic and revenue study and its administrative review process. At its July 2003 meeting, the CTB authorized the Virginia Department of Transportation to hire an on-call consultant to prepare traffic and revenue studies for current and proposed toll facilities throughout the state. Procurement of a consultant to perform these studies is currently underway.

- **Dulles Corridor Transportation Improvement District.** In 2001, the Virginia General Assembly passed legislation that authorized the establishment of special transportation improvement districts within Fairfax County and the Town of Herndon to support construction of the Dulles Corridor Rapid Transit Project. A landowner's group (the Landowners Economic Alliance for the Dulles Extension of Rail – LEADER) was then created to begin the administrative process necessary to create a transportation improvement district to support the Project.

  Creation of the Dulles Corridor Transportation Improvement District requires the consent of a majority of the commercial landowners within the district (either by land area or assessed value) and legislative approval from the Fairfax County Board of Supervisors. A petition prepared jointly by Fairfax County and LEADER is now being circulated among District property owners for review and approval. LEADER plans to complete the petition and submit it to the Fairfax County Board by the end of the year.

After the petition is filed, a public hearing on the petition would be held to solicit comments from residents and owners of property within the proposed district. The Fairfax County Board of Supervisors would then consider a resolution to create the District and determine the timing for initiating tax revenue collection.

Revenues allocated to the Project from the Commonwealth Mass Transit Fund and the Northern Virginia District Transportation Fund have already been expended for planning and environmental review activities. No new revenues from these sources would be used for design or construction of the proposed LPA Phase 1.

## 8.3 OPERATING FUNDING PLAN

The projected operating and maintenance (O&M) costs for the opening year and forecast horizon year (2025) were developed for Metrorail operations under the proposed LPA and LPA Phase 1. The annual operating costs (in 2001 dollars) for Metrorail, Metrobus and other local transit operators are provided in Chapter 6.

### 8.3.1 PROPOSED LOCALLY PREFERRED ALTERNATIVE

The operating funding plan for the proposed LPA is described below.

#### A. Proposed Full LPA

As described in Chapter 6, the operating plan for the proposed LPA would be similar to the Metrorail Alternative (T6/Y15). Therefore the annual incremental Metrorail operating costs for the proposed LPA would also be similar to the Metrorail Alternative (T6/Y15).

Local bus transit services provided by Fairfax County, Loudoun County, and WMATA are not subject to the WMATA Compact Metrorail Subsidy Allocation Formula. The existing transit service may potentially be affected as a result of the new service. The following changes are estimated in the forecast year 2025, using FY 2001 dollars. For Fairfax County, the estimated changes resulting from the reassigned bus routes will result in a decrease of $2,810,000 per year under the LPA. Loudoun County is estimated to potentially reduce its Commuter Bus transit service by approximately $250,000 per year with the LPA. Potential savings to the WMATA Metrobus would be $1,200,000 per year with the LPA.

#### B. Proposed LPA Phase 1

Under the proposed LPA Phase 1, Metrorail operating costs would be less than those of the proposed LPA due to the shorter alignment of proposed LPA Phase 1. Table 8.3-1 presents incremental changes to the O&M costs, revenue and subsidy allocation to the WMATA Compact member jurisdictions for LPA Phase 1.

**Table 8.3-1 Compact Member Incremental Subsidy Requirement– Proposed LPA Phase 1 (Millions YOE Dollars)**

| | LPA Phase 1 | |
|---|---|---|
| | **Opening Year** | **2025** |
| **Total Project O&M Costs** | $48.70 | $101.60 |
| **Project Operating Revenue** | $23.20 | $41.60 |
| WMATA Compact Member Subsidy | | |
| District of Columbia | $5.98 | $13.19 |
| Virginia | $12.62 | $31.56 |
| Alexandria | $0.96 | $2.18 |
| Arlington County | $2.47 | $5.83 |
| Fairfax City | $0.08 | $0.18 |
| Fairfax County | $9.04 | $23.19 |
| Falls Church | $0.08 | $0.18 |
| Loudoun County | $0.00 | $0.00 |
| Maryland | $6.90 | $15.35 |
| Montgomery County | $3.39 | $7.53 |
| Prince George's County | $3.51 | $7.83 |
| **Total Project Subsidy** | $25.50 | $60.00 |

Internal totals may not tally due to rounding

Local bus transit services provided by Fairfax County, Loudoun County, and WMATA are not subject to the WMATA Compact Metrorail Subsidy Allocation Formula. The existing transit service may potentially be affected as a result of the new service. The following changes are estimated in the forecast year 2025, using FY 2001 dollars. For Fairfax County, the estimated changes resulting from the reassigned bus routes will result in a decrease of $1,250,000 under LPA Phase 1. Loudoun County is estimated to potentially reduce its Commuter Bus transit service by approximately $250,000 per year with LPA Phase 1. Potential savings to the WMATA Metrobus would be $1,200,000 per year with LPA Phase 1. Premium bus service is expected to cost $2,800,000 annually.

# 9 SECONDARY AND CUMULATIVE EFFECTS

This chapter presents the long-term secondary and cumulative effects of the proposed Locally Preferred Alternative (LPA), proposed LPA Phase 1, and the No Build Alternative. The following sections describe only those effects of the proposed LPA and proposed LPA Phase 1 that differ from the effects of the Metrorail Alternative (T6/Y15) presented in the Draft EIS. The analysis in this section focuses primarily on changes in the following areas of concern:

- Determining the secondary effects associated with construction of the proposed LPA and LPA Phase 1 and the induced development (also referred to as secondary development) that would occur at transit station areas;
- Describing the potential cumulative effects that would occur due to construction of the proposed LPA and LPA Phase 1 in addition to past, present, and future reasonably foreseeable projects described for the No Build Alternative in Chapter 2; and
- Suggesting mitigation measures that could reduce the potential for secondary and/or cumulative effects.

As described in the Draft EIS, several resources were evaluated for secondary effects, including neighborhoods, community services, and cohesion; displacements; visual and aesthetic conditions; cultural resources; parks and recreation resources; geologic resources; water resources; aquatic biota and habitat; terrestrial biota and habitat; rare, threatened, and endangered species; and traffic and associated air quality impacts. Most of these resources were also assessed for cumulative effects. However, if a proposed project does not result in an impact to a certain resource, then it would not contribute to cumulative impacts to that resource.

## 9.1 SECONDARY DEVELOPMENT EFFECTS

This section addresses long-term secondary effects of the proposed LPA, proposed LPA Phase 1, and the No Build Alternative. Secondary development effects are impacts related to the increased density of development that would occur because local jurisdictions have plans in place that allow for greater density in some areas if transit is provided. The characteristics of the secondary development generated at station areas under the proposed LPA, proposed LPA Phase 1, and the No Build Alternative are described further in Chapter 5 of this document.

### 9.1.1 LONG-TERM EFFECTS

This section describes the long-term secondary development effects of the No Build Alternative, the Metrorail Alternative (T6/Y15), and the proposed LPA, including the proposed LPA Phase 1. The primary source of potential secondary effects would be the increased development allowed in the station areas under the proposed LPA and proposed LPA Phase 1. Though the addition of transit would not directly cause the development to

occur, county comprehensive plans have been modified to ensure that new development is located in the vicinity of stations if a new transit line is built.

#### 9.1.1.1 No Build Alternative

Under the No Build Alternative, the density bonuses at the station areas would not be triggered, and current development patterns would continue. Driven by market conditions, development would not be focused in certain areas but rather would occur throughout the corridor. Undeveloped lands, including natural lands and farmlands in the corridor, would continue to be developed based on market demands. Under the No Build Alternative, traffic congestion on local roads and regional highways would continue to worsen.

#### 9.1.1.2 Proposed Locally Preferred Alternative

The long-term secondary development effects of the proposed LPA, including the proposed LPA Phase 1, are described below.

##### A. Proposed Full LPA

For the proposed LPA, the primary source of potential secondary effects is the increased commercial and residential development generated in the station areas due to Metrorail improvements. The secondary development effects of the proposed LPA would be similar to those of the Metrorail Alternative (T6/Y15), as none of the design refinements would have a significant effect on the development potential of the station areas. Secondary development under the proposed LPA would result in an increase in population of approximately 7 percent over the No Build Alternative. Within the station areas, the changes in population range from zero percent at Route 606 to 986 percent at Wiehle Avenue. Potential increases in employment within station areas would range from 13 percent at Reston Parkway to 236 percent at the Route 28 Station.

##### B. Proposed LPA Phase 1

Under proposed LPA Phase 1, secondary development generated by density bonuses would occur only at station areas in Tysons Corner and at Wiehle Avenue. If the proposed LPA is not implemented in its entirety by 2025, development at stations west of Wiehle Avenue is projected to occur at levels and in patterns consistent with those of the No Build Alternative. The total effects on population and employment under proposed LPA Phase 1 would be less than those of the full LPA. As described in Chapter 5, station area development related to proposed LPA Phase 1 would result in a 4.5 percent increase in population, and a 6.3 percent increase in employment in the corridor by 2025.

While the effects of the secondary development occurring under proposed LPA Phase 1 would be lower than those of the proposed LPA, the proposed LPA Phase 1 is also less consistent with goals stated in the Fairfax and Loudoun county comprehensive plans to promote more pedestrian-friendly and transit-oriented communities in the corridor through the provision of rapid transit.

Because Tysons Corner is already urban in character, the increase in population associated with the proposed LPA and LPA Phase 1 would not be considered an impact. In fact, the introduction of Metrorail service and the associated increase in transit-oriented development allows Tysons Corner to achieve the goal of becoming a more pedestrian–friendly and transit-oriented community as directed by the *Fairfax County Comprehensive Plan.* At the Wiehle Avenue Station, population would increase by nearly 1,000 percent, potentially creating greater demand on parks, schools, community facilities and services and potential effects on traffic, air pollution, and noise. However, the secondary development effects of the proposed LPA Phase 1 upon these resources

would be less than those of the proposed LPA because increases in corridor population and employment would be lower under the proposed LPA Phase 1.

Under the proposed LPA Phase 1, changes in visual character due to denser, transit-oriented development would occur in Tysons Corner and at the Wiehle Avenue Station area. Changes in visual character due to denser development would not be significant in the western part of Fairfax County and Loudoun County, as current development patterns and trends would continue.

The travel effects related to secondary development for proposed LPA Phase 1 are projected to be similar to those documented in the Draft EIS for the Metrorail Alternative (T6/Y15) for the Wiehle Avenue Station area and areas east of Wiehle Avenue.

Similar to the proposed LPA, secondary development at the station areas under the proposed LPA Phase 1 could also have some minor additional impacts on water resources due to increases in impervious surfaces. However, the impacts are not projected to be significantly greater than those that would occur under the No Build Alternative.

## 9.2 CUMULATIVE EFFECTS

Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. The analysis of cumulative impacts addresses the "mitigated condition" for both the Dulles Corridor Rapid Transit Project and the other projects included in the analysis.

In determining the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern, other transit, highway, and non-transportation projects were reviewed in conjunction with the social, environmental, economic, and transportation effects, as described in the Draft EIS. If the proposed project and the other projects added together would result in an impact that would be considered substantial as a direct impact, then a substantial cumulative impact would occur. At this point, the proposed project level of contribution to the cumulative impact must be considered, and mitigation, if available, must be identified appropriate to that contribution.

### 9.2.1 LONG-TERM EFFECTS

This section describes the cumulative effects of the No Build Alternative, the Metrorail Alternative (T6/Y15), and the proposed LPA, including the proposed LPA Phase 1.

#### 9.2.1.1 No Build Alternative

The No Build Alternative would not result in any project-related cumulative impacts.

#### 9.2.1.2 Proposed Locally Preferred Alternative

The cumulative effects of the proposed LPA, including the proposed LPA Phase 1, are described below.

## A. Proposed Full LPA

The cumulative impacts of the proposed LPA are expected to be similar to those presented under the Metrorail Alternative (T6/Y15) in the Draft EIS. None of the proposed design refinements are of the scale that would change the projected cumulative effects. As described in the Draft EIS, cumulative effects to most of the resources assessed are not expected to occur.

Many of the projects analyzed are located within existing public rights-of-way or in urbanized areas where effects are limited, especially in relation to natural resources. The direct effects of the proposed LPA are minimal because it is located mostly within existing transportation corridors and areas that are already developed. Thus, the contribution of the proposed LPA to cumulative effects in the larger context is limited.

## B. Proposed LPA Phase 1

If the proposed LPA is not implemented in its entirety by 2025, the cumulative effects associated with the combination of the proposed LPA Phase 1, other transportation projects, and secondary development effects are expected to be similar to those presented for the proposed LPA, with the exception of conditions in the western part of the corridor. The proposed LPA Phase 1 would provide residents and businesses in the western part of the corridor with closer proximity to Metrorail service, creating the potential for greater levels of development in these areas. Because the density bonuses and transit-oriented development guidelines would not be in place in areas west of Wiehle Avenue under the proposed LPA Phase 1, development is likely to occur in market-driven patterns similar to the No Build Alternative.

Although this development is expected to occur under the No Build Alternative, there is the potential for the associated increases in population and employment to occur more rapidly under the proposed LPA Phase 1, creating a greater strain on public resources including parks, schools, and community facilities and services. As such, local jurisdictions would not be able to provide the same linkages between secondary development and the transportation system to reduce the potential for cumulative effects in areas west of the Wiehle Avenue station area.

Changes in land use would occur under the proposed LPA and proposed LPA Phase 1 if the other projects referenced above were implemented. These changes would be most dramatic in Loudoun County, where land use that is currently rural in nature would be converted to mixed-use suburban centers. These changes are recommended in the *Loudoun County Revised Comprehensive Plan* and are anticipated to occur to some extent regardless of this project.

Loudoun County has instituted planning guidelines that focus development in the eastern part of the county (primarily south and east of Leesburg) in areas with better transportation access and planned infrastructure improvements. The presence of premium bus service at the Route 772 and Route 606 stations would contribute to the demand for development in these station areas. Therefore, while the proposed LPA Phase 1 would also create a greater demand for development in the eastern part of the county, the county's existing development controls are expected to help focus the development in pedestrian friendly, transit-oriented development patterns.

As described in the Draft EIS, traffic conditions in the corridor are anticipated to worsen as the population and employment increase. The proposed LPA, proposed LPA Phase 1, and many of the projects in the No Build Alternative are aimed at alleviating this condition. While Wiehle Avenue would be the terminus for Metrorail

service under proposed LPA Phase 1, premium bus service would provide the western part of the corridor with transit access and reduce the traffic impacts at the terminal station.

## 9.3 MITIGATION

Secondary and cumulative effects associated with this project are related primarily to growth anticipated under the No Build Alternative and secondary development at transit station areas. Strategies for mitigating secondary and cumulative impacts of the proposed LPA would be similar to those presented in the Draft EIS.

The mitigation strategies for the proposed LPA Phase 1 would also be largely the same as those discussed for the Metrorail Alternative (T6/Y15) in the Draft EIS. In many respects, county development permitting processes would provide the means to mitigate any potential for adverse secondary and cumulative impacts to neighborhoods, cultural resources, and natural resources. County regulations allow the localities to cluster future development in locations that are best able to support that development in terms of providing transit, walking, and biking alternatives to residents and employees.

If the proposed LPA is not implemented in its entirety by 2025, less development would be permitted under county regulations to be clustered at the station areas. As described in the Draft EIS,transit-related growth patterns have significant potential to support travel demand management (TDM) strategies. Therefore, the TDM strategies described in the Draft EIS, while still effective, may have less of an effect of reducing single occupant vehicle travel under the proposed LPA Phase 1 than with implementation of the proposed LPA.

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# 10 EVALUATION OF ALTERNATIVES

The evaluation of alternatives presented in this Supplemental Draft Environmental Impact Statement (EIS) has multiple purposes. First, the analysis is intended to present an evaluation of the effects of the proposed Locally Preferred Alternative (LPA) and the proposed LPA Phase 1 as compared to the No Build Alternative and the Metrorail Alternative (T6/Y15). All alternatives have been analyzed for how well they would perform in meeting the stated goals and objectives for the Dulles Corridor Rapid Transit Project. Second, the analysis is intended to show that the design changes proposed for the LPA would not substantially modify the benefits or effects of the Metrorail Alternative (T6/Y15) carried forward from the Draft EIS published in June 2002.

Virginia Department of Rail and Public Transportation (DRPT) is seeking Federal New Starts funding from the Federal Transit Administration (FTA) for the Dulles Corridor Rapid Transit Project. In order to recommend to Congress which projects should receive New Starts funding, FTA evaluates each project based on its mobility improvements, environmental benefits, operating efficiencies, cost-effectiveness and land use benefits provided by the project. FTA also evaluates the financial plan and funding commitments of a project. The evaluation measures used to compare the No Build Alternative with the proposed LPA and LPA Phase 1 Alternatives were developed based on local goals and objectives for the project and the Federal New Starts criteria.

## 10.1 EVALUATION RELATIVE TO PROJECT GOALS AND OBJECTIVES

The goals and objectives for the Dulles Corridor Rapid Transit Project are intended to reflect the transportation needs of the corridor. Project goals range from improving public transit and broadening the availability of transportation services, to supporting future land use development patterns, to preserving and enhancing neighborhood and environmental quality.

In general, the No Build Alternative would not meet the goal of providing improved transit service in the Dulles Corridor as well as the proposed LPA. The proposed LPA would offer a much better level of transit service than what is included under the No Build Alternative, enhancing mobility for corridor residents and employees, especially during the midday. Moreover, the No Build Alternative would be inconsistent with local and regional comprehensive plans, which specifically identify rapid transit improvements in the Dulles Corridor as a critical element in shaping development in the corridor and meeting regional economic development goals.

The effectiveness of the proposed LPA in meeting the project goals and objectives would be similar to the Metrorail Alternative (T6/Y15) evaluated in the Draft EIS. The design modifications for the proposed LPA would result in slightly higher ridership, reduced visual impacts at the eastern end of the corridor, and an increase in effects on streams and water quality in the western end of the corridor. Overall, the proposed LPA would have similar transportation benefits and social and environmental effects, and provide similar support for future development in the Dulles Corridor to the Metrorail Alternative.

The proposed full LPA would provide higher transportation and economic development benefits than the proposed LPA Phase 1. Only the proposed full LPA would be consistent with future land use designations or future land development patterns west of Wiehle Avenue and provide high-quality, high-capacity transit service to the Dulles International Airport, one of the world's fastest growing airports.

The proposed LPA Phase 1 would not have the same level of transportation benefits, and would not be as consistent with future development plans, but would have fewer negative effects on environmental resources and communities in the Dulles Corridor than the proposed LPA. Significant increases in boardings would occur at the proposed Wiehle Avenue Station since it would serve as the terminal station and would support significant transfer activity. In general, proposed LPA Phase 1 would perform similarly to the proposed LPA from Wiehle Avenue Station to the existing Metrorail Orange Line. Implementation of premium bus service in the western end of the corridor for proposed LPA Phase 1 would typically have minimal physical effects and fewer transportation and development benefits.

Table 10.1-1 outlines the essential differences in performance relative to the project goals and objectives for the proposed LPA, proposed LPA Phase 1, and the Metrorail (T6/Y15) and No Build alternatives presented in the Draft EIS.

**Table 10.1-1 Summary of Effects**

| Measures of Effectiveness | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Goals 1 and 2: Improve Transit Service and Increase Transit Ridership | | | | | | |
| *Provide More Frequent Service* | | | | | | |
| Peak Period Headways (Minutes) | 5 – 30 | 6 | None | 6 | 6 | 6 |
| Off Peak Period Headways (Minutes) | 30 - 60 | 12 | None | 12 | 12 | 12 |
| *Provide Multi-Modal Access* | | | | | | |
| Access to Automobile Park-and-Rides (No.) | 2 | 6 | None | 6 | 4 | 4 |
| Access to Bus/Rail Stations (No. Bus/No. Rail) | 3/1 | 10/11 | None | 10/11 | 3/5 | 3/5 |
| Rail Service to Air Travel Centers (No. Airports) | 0 | 2 | None | 2 | 1 | 1 |
| Improve Travel Times | No | Yes | None | Yes | Partial | Partial |
| Provide Integrated, Seamless Service | No | Yes | None | Yes | Partial –West of Wiehle Ave. | Partial – West of Wiehle Ave. |
| Improve the Amenities of the Existing Transit Service | No | Yes | None | Yes | Yes – Less than Full LPA | Yes – Less than Full LPA |
| Daily Station Boardings at Wiehle Avenue Station | - | 6,645 | +146 | 6,791 | 9,164 | 7,432 |

| Measures of Effectiveness | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| **Goal 3: Support Future Development** | | | | | | |
| Improved Accessibility to Activity Centers | No | Yes | None | Yes | Partial | Partial |
| Consistent with Existing Land Use | Yes | Yes | None | Yes | Yes | Yes |
| Consistent with Future Land Use | No | Yes | None | Yes | Partial | Partial |
| Stations Compatible with Neighborhoods | - | Yes | None | Yes | Yes | Yes |
| **Goal 4: Support Environmental Quality** | | | | | | |
| *Attainment of Air Quality Goals* | | | | | | |
| Improved Vehicle Emissions | Yes | Yes | None | Yes | Yes | Yes |
| Reduction in Regional VMT (Miles) | - | 257.4M | None | 257.4M | 192.1M | 214.5M |
| NAAQS Violations | No | No | None | No | No | No |
| *Minimize Negative Impacts to Traffic Patterns* | | | | | | |
| Number of Intersections at LOS F – p.m. | 16 | 17 | None | 17 | 6 | Not Available |
| Number of Intersections Requiring Mitigation | - | 9 | None | 9 | 0 | 5 |
| *Minimize Negative Impacts on Neighborhoods and Residential Land Use* | | | | | | |
| Residential Displacements | 0 | 0 | None | 0 | 0 | 0 |
| Residential Properties Partially Acquired | 0 | 12 | None | 12 | 12 | 12 |
| Community Cohesion | - | No Effect | None | No Effect | No Effect | No Effect |
| Community Facility Impacts | 0 | 2 | None | 2 | 1 | 1 |
| *Minimize Negative Impacts to Ecologically Sensitive Areas* | | | | | | |
| Wetlands Effects (Acres) | 0 | 5.0 | -0.1 | 4.9 | 0.1 | 0 |
| Stream/Water Quality Effects (Linear Feet) | 0 | 96 | +149 | 245 | 0 | 0 |
| Prime Upland Systems (No. Affected) | 0 | 1 | None | 1 | 0 | 0 |
| *Minimize Negative Impacts to Historic and Cultural Resources* | | | | | | |
| Potential Adverse Effects Archaeological Sites | 0 | 4 | -1 | 3 | 0 | 0 |

| Measures of Effectiveness | Draft EIS | | Changes in Effects (T6/Y15 v. Full LPA) | Proposed Locally Preferred Alternative | | |
|---|---|---|---|---|---|---|
| | No Build Alternative | Metrorail Alternative (T6/Y15) | | Full LPA | LPA Phase 1 2025 | LPA Phase 1 Opening Year |
| Potential Adverse Effects Historic Sites | 0 | 0 | None | 0 | 0 | 0 |
| Section 4(f) (Parklands) Constructive/Direct Uses | 0 | 0 | None | 0 | 0 | 0 |
| *Minimize Negative Visual and Aesthetic Impacts* | | | | | | |
| Tysons Corner | No | Yes | Impact Reduced | Impact Reduced | Impact Reduced | Impact Reduced |
| W&OD Railroad Regional Park | No | Yes | Impact Reduced | Impact Reduced | Impact Reduced | Impact Reduced |
| Dulles Airport Historic District | No | Yes | Impact Reduced | Impact Reduced | No Effect | No Effect |
| **Goal 5: Provide Cost Effective, Achievable Transportation Solutions** | | | | | | |
| *Improvements Consistent with Funding Capacity* | | | | | | |
| Capital Costs (By Year of Expenditure) | $0 | $3.1B | +$0.3B | $3.4 B | $1.5B | $1.5B |
| Likely Non-Federal Funding Sources | - | Commonwealth of Virginia, MWAA, Fairfax and Loudoun counties | None | Commonwealth of Virginia, MWAA, Fairfax and Loudoun counties | Commonwealth of Virginia, Fairfax County | Commonwealth of Virginia, Fairfax County |
| *Minimize Project Operating Costs* | | | | | | |
| Annual Systemwide O&M Costs – 2025 (2001$) | $533.5M | $601.4M | None | $601.4M | $573.8M | $520.6M |
| O&M Systemwide Cost Per Passenger Mile | - | $0.26[1] | $0.015 | $0.26[1] | $0.26[1] | $0.28 |
| *Optimize Cost-Effectiveness* | | | | | | |
| Capital Cost Per Revenue Mile (2001$) | - | $193.2 | None | $193.2 | $139.4 | $210.8 |
| Capital Cost Per New Rider | - | $18.69 | -$0.23 | $18.46 | $11.54 | $9.43 |
| **Goal 6: Serve Diverse Populations** | | | | | | |
| Improve Accessibility for Low-Income and Minority Areas (EJ Neighborhoods Without Service) | 7 | 0 | None | 0 | 1 | 6 |
| Physical Impacts to Low-Income and Minority Areas | None | None | None | None | None | None |
| Compliance with ADA | Yes | Yes | None | Yes | Yes | Yes |

[1] Actual numbers are $0.2627 for Metrorail T6/Y15, $0.2612 for proposed Full LPA, and $0.2604 for proposed LPA Phase 1 2025.

## 10.2 ISSUES TO BE RESOLVED

Once the proposed LPA is selected and prior to circulating the Final EIS, every reasonable effort will be made to resolve interagency issues related to the proposed action. If significant issues remain unresolved, these issues, and the consultations and efforts made to resolve the issues, will be documented in the Final EIS.

During preparation of the Draft EIS and the Supplemental Draft EIS, the following issues were identified that will require further interagency consultation or additional action:

- Coordination with local communities to address outstanding issues related to facility design, potential effects, and mitigation;
- Coordination with the Federal Aviation Administration (FAA) as a cooperating agency to satisfy FAA's responsibilities under the *National Environmental Policy Act of 1969* (NEPA);
- Coordination with FAA and the Metropolitan Washington Airports Authority (MWAA) regarding revisions to the Airport Land Use and Airport Layout plans to reflect use of Dulles Airport property for project improvements. FAA approval would be required for the release of any property currently dedicated for airport purposes;
- Coordination among DRPT, the Washington Metropolitan Area Transit Authority (WMATA), MWAA, Fairfax County, and Loudoun County regarding project financial planning and funding;
- Further coordination with local and federal regulatory agencies regarding design, construction, and permitting requirements;
- Coordination with the Virginia State Historic Preservation Officer (SHPO) according to an agreement in the process of being executed between the SHPO, FTA, and DRPT, with WMATA, MWAA, and Fairfax and Loudoun counties as concurring parties and;
- Development of master agreements between DRPT and MWAA, Fairfax County, Loudoun County, and TRIP II of the Dulles Greenway.

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# 11 COMMENTS, CONSULTATIONS, AND COORDINATION

This chapter presents the public involvement and agency coordination activities following the circulation of the Draft EIS in June 2002, and their relationship to the activities undertaken for the development of this Supplemental Draft EIS. Based on comments received from the public, local governments and participating agencies, the Metrorail Alternative (T6/Y15) was selected for implementation. Subsequent to the selection of this alternative, additional coordination with the public and agencies helped to define and identify the changes to the project. These included modifications to the alignments and facilities, as well as introduction of construction phasing and a revised implementation schedule. These changes were incorporated into the project as a direct result of comments made during the public review of the Draft EIS to develop the proposed Locally Preferred Alternative (LPA), including the proposed LPA Phase 1, evaluated in this Supplemental Draft EIS.

## 11.1 PUBLIC INVOLVEMENT

The public involvement activities for the Supplemental Draft EIS are based upon the foundations established during preparation of the Draft EIS. Public outreach during the circulation of the Draft EIS was conducted in accordance with *National Environmental Policy Act of 1969* (NEPA), as amended, the Commonwealth of Virginia, and the Washington Metropolitan Area Transit Authority (WMATA) Compact requirements. On June 28, 2002, the Draft EIS and General Plans were made available for public review and comment. The Environmental Protection Agency (EPA) also published a Notice of Availability for the Draft EIS in the *Federal Register* on July 12, 2002.

The official notice of the public hearings was published in the *Washington Post* on June 28 and July 5, 2002. Advertisements were also published in the Northern Virginia Journal, the Connection Newspapers, and the Times Community Newspapers. Press releases (available in Spanish as well as English) announcing public hearing dates were delivered to over 60 media outlets in the region on July 22, 2002. Meeting announcements designated for public service broadcasting were sent to over 50 radio and television stations in the region. In addition, announcements for posting on television "bulletin boards" were delivered to Loudoun Cable Television, Fairfax Cable Access Television, Reston Comcast Cable Television, and Herndon Community Television. Public hearing information was available on the project website, at the project information center in Reston and the Tysons Center kiosk, and at libraries and community centers throughout Fairfax and Loudoun counties. A project newsletter announcing the Draft EIS public hearings was sent to over 11,000 recipients.

The Notice of Public Hearings also was distributed to properties on the Project Posting Limit List, which included those properties in the vicinity of the proposed project improvements and the WMATA Acquisition List. The Notice was hand delivered to 2,728 properties and tenants located in the vicinity of the proposed transit improvements and sent by first-class mail to 5,661 property owners and tenants within the official Posting Limit. The Notice was also sent via United States Postal Service Certified Mail to the 94 property owners on the Acquisition List. In addition, the Notice was distributed to state and local agencies and representatives of

civic associations within the study area. In all, approximately 13,000 Notices of Public Hearings were distributed.

Public hearings were held at three different locations in the corridor on July 29, 30, and 31, 2002:

- Monday July 29, 2002, Spring Hill Elementary School, McLean, Virginia;
- Tuesday July 30, 2002, Langston Hughes Middle School, Reston, Virginia; and
- Wednesday, July 31, 2002, Stone Bridge High School, Ashburn, Virginia.

Each public hearing session began with an open house at 6:00 p.m., followed by formal public hearing proceedings at approximately 7:00 p.m. Verbal testimony and written comments were accepted at the hearings. Over the three-night period a total of 110 witnesses provided testimony and 131 comment cards were collected. In addition, written comments were accepted until August 28, 2002, 45 days from the publication of the Notice of Availability.

The comments and responses received on the Draft EIS were compiled and circulated in the *Public Hearings Report* (October 2002). The *Public Hearings Report* was mailed to all parties who provided testimony or submitted a statement for the public hearing record, and to those who submitted written comments during the Draft EIS public comment period. The report was also posted on the project website. The public was given 15 days to comment on responses to their comments and the recommendations to advance the project using the Metrorail Alternative. Comments received on the *Public Hearings Report* (October 2002) and their responses were documented in the *Public Hearings Report Supplement* (November 2002).

During refinement of the Metrorail Alternative after the *Public Hearings Report Supplement*, additional public and agency coordination led to proposed design modifications, including the introduction of construction of the project in two increments. As a result of these proposed modifications, this Supplemental Draft EIS has been prepared to provide additional opportunities for the public and agencies to comment on the proposed LPA for the project before proceeding with a Final EIS. The public involvement program subsequent to the Draft EIS circulation and to support the Supplemental Draft EIS included a wide range of meetings throughout 2002 and 2003 with diverse audiences, including both individuals and civic groups (see Appendix). In addition, in preparing the Supplemental Draft EIS, updates and newsletters were sent to approximately 11,000 people and posted on the project website. The project INFO Line was continued, the Tysons Kiosk remained open through July 31, 2003, and project documents were kept on hand at local libraries and community centers throughout Fairfax and Loudoun counties.

Following circulation of the Supplemental Draft EIS in October 2003, two public hearings will be held in December 2003 at different locations along the corridor. After the close of the 45-day comment period, a Final EIS will be prepared. As an interim step in preparing the Final EIS and to fulfill WMATA Compact requirements, a Public Hearing Report will be prepared and circulated to the public for comment. Based on the findings and determinations in the Final EIS and after a 30-day agency circulation period, the Federal Transit Administration (FTA) will issue a Record of Decision (ROD). The ROD is anticipated in the late spring of 2004, and will describe the proposed project, summarize the environmental findings, and identify the mitigation requirements associated with project implementation.

## 11.2 AGENCY COORDINATION

This section summarizes ongoing coordination with local, state, and federal agencies to support the environmental review process for the project. FTA is the lead agency for the project, the Virginia Department of Rail and Public Transportation (DRPT) is the project sponsor, and WMATA is the technical manager. The Federal Aviation Administration (FAA) is a cooperating agency. Coordination activities have involved over 24 environmental, regulatory, and resource agencies. These agencies have provided technical expertise regarding the identification of resources, impacts assessment, and development of mitigation. Major issues raised as a result of agency comments include:

- Potential noise impacts along the corridor and at West Falls Church S&I Yard;
- Visual impacts and aesthetic effects;
- Safety and security;
- Changing Virginia Pollution Discharge Elimination System (VPDES) requirements for the Commonwealth of Virginia;
- Section 106 coordination;
- Wetlands management; and
- Traffic and parking impacts.

The Appendix contains the comments received from agencies during the preparation of the Supplemental Draft EIS.

### 11.2.1 Regulatory and Cooperating Agency Coordination

Major coordination meetings with key resource, regulatory and environmental agencies in support of the Supplemental Draft EIS are summarized below.

**U.S. Army Corps of Engineers (USACE), Virginia Department of Environmental Quality (VDEQ), and the Environmental Protection Agency (EPA) – February 14, 2003.** The purpose of this coordination was to provide an update on the project, to discuss possible wetland mitigation measures, to review the historic and environmental impacts of construction at S&I Yard Site 15, and to introduce the Comstock Project. Discussions on wetland issues determined that as impacts were minimal, mitigation at an approved wetland bank or in-lieu fee fund would be acceptable. For S&I Yard Site 15, it was agreed that further coordination with the Virginia Department of Historic Resources (VDHR) would be needed on possible archeological impacts. Further coordination was also arranged regarding responsibility for the mitigation of possible effects to the property proffered for the Comstock Project.

**Virginia Department of Historic Resources (VDHR) – February 27, 2003.** This coordination focused on the initiation of the Section 106 process and the Programmatic Agreement (PA), the possible historic value of S&I Yard Site 15, and the historic importance of Dulles Airport's "peekaboo" view sequence. It was determined that the PA would be revised and submitted to VDHR and that the Advisory Council of Historic Preservation (ACHP) would be informed of DRPT's and WMATA's intent to enter into a PA. In addition, the peekaboo sequence along the Dulles International Airport Access Highway (DIAAH) would be further evaluated and the limits of the airport historic district would be clarified.

**Metropolitan Washington Airports Authority (MWAA), Metropolitan Transit Police Department (MTPD), and Transportation Security Administration (TSA) - March 11, 2003 and April 24, 2003.** The March 11 meeting initiated discussions on security issues posed by the proposed Metrorail station at Dulles Airport. Discussions focused on a TSA sign-off on the NEPA documents as referenced by the FAA. Other topics included the need to secure the rail yard site and separate it from the airfield. TSA's primary issues were security concerns, and what measures should be taken to keep both the airport and Metrorail secure. These issues were discussed further at the April 24 meeting.

**Correspondence with Virginia Department of Conservation and Recreation (VDCR).** Correspondence from VDCR dated November 1, 2002 requested that their staff be provided with results of two diabase glade habitat surveys that were conducted as part of the analysis of rare, threatened, and endangered species for the Draft EIS for S&I Yard Site 15. The agency was concerned that the initial surveys were taken at a time when the seven state and globally rare plant species associated with diabase glade communities potentially located at S&I Yard Site 15 would not be flowering. In response to these concerns, two follow-up rare plant surveys were conducted in July and August 2002. The follow-up surveys were conducted at times when the rare plants would be flowering, however no evidence of the seven rare plants was found. Both surveys indicated that there is absence of suitable habitat for the rare diabase plants at S&I Yard Site 15.

**Correspondence with Virginia Department of Environmental Quality (VDEQ).** After the publication of the Draft EIS, VDEQ requested that coordination take place in regards to 34 sites of potential concern that were not identified during the analysis of hazardous and contaminated materials for the Draft EIS. These sites are likely to contain Recognized Environmental Conditions (REC), as they include several gas stations, auto dealerships, and airport-related facilities.

**Correspondence with Advisory Council on Historic Preservation (ACHP).** Correspondence with ACHP dated June 19, 2003 invited their staff to participate in further consultation to consider means to avoid or minimize project-related impacts to historic properties, under the requirements of Section 106 of the National Historic Preservation Act, and request ACHP participation as a signatory to the Programmatic Agreement. After reviewing related project materials, ACHP responded that their participation would not be needed to resolve potential effects to historic resources.

### 11.2.2 Technical Working Group, Steering Committee, Elected Officials, and Board Meetings

During the development of the Supplemental Draft EIS, meetings were held with members of the Steering Committee, elected officials representing districts in the Dulles Corridor, the Commonwealth Transportation Board (CTB), and the WMATA Board of Directors .

**Dulles Corridor Technical Working Group.** Agency representatives with technical expertise participated in the Technical Working Group. Jurisdictions and agencies represented in the Technical Working Group include the Virginia Department of Transportation (VDOT), MWAA, Fairfax County, Loudoun County, Arlington County, Town of Herndon, and TRIP II (the owner of the Dulles Greenway). A technical working group meeting was held to discuss federal funding issues, proposed project phasing, and other modifications to the proposed LPA.

**Dulles Corridor Steering Committee.** The Dulles Corridor Task Force was established in 1998 to help the Virginia Secretary of Transportation develop transit solutions for the Dulles Corridor. This group was instrumental in advancing the project into the environmental study phase. During the preliminary engineering and environmental review study phase, a new group called the Dulles Corridor Steering Committee was established to provide oversight and policy direction on issues related to the project's financing, construction, and operation. A subset of the original Dulles Corridor Task Force membership, the Steering Committee is composed of the executives from each of the project's funding partners:

- Northern Virginia District Representative of the Commonwealth Transportation Board (CTB) (Steering Committee Chairman);
- DRPT Director;
- WMATA Chief Executive Officer;
- MWAA General Manager;
- Fairfax County Executive;
- Loudoun County Administrator; and
- Herndon Town Manager.

The Steering Committee met as needed throughout the development of the Supplemental Draft EIS to discuss policy, financial planning, and management issues. As a part of this effort, the Steering Committee reviewed and discussed the proposed project phasing and modifications to the proposed LPA. The committee also identified several options for providing the non-federal share of capital funding, built on the work of the Financial Working Group to determine an equitable allocation of capital and operating costs among the funding partners, and developed a recommended implementation schedule for the project.

**Elected Officials.** During the development of the Supplemental Draft EIS, officials representing the Hunter Mill, Providence, Dranesville, Sully, and Springfield Districts of Fairfax County requested meetings with the project sponsors to discuss project status and possible impacts to neighborhoods where new Metrorail stations and rail would be constructed. Constituents from these districts are most often concerned with traffic and parking issues, as well as with noise, thus these were the topics that were most frequently discussed at meetings with elected officials.

**Commonwealth Transportation Board (CTB) and the WMATA Board of Directors.** As mentioned previously in Chapter 1 of this Supplemental Draft EIS, several local deliberative bodies are responsible for making decisions during the preliminary engineering and environmental review phase of project development. One of these bodies, the CTB, is a 17-member board appointed by the Governor of Virginia. The board is primarily responsible for locating routes, approving construction contracts, creating traffic regulations, naming highways, and administering and allocating transportation funds in Virginia.

Another of these deliberative bodies is the WMATA Board of Directors, a six-member board consisting of two principal Directors from each signatory jurisdiction (Virginia, Maryland, and the District of Columbia). In addition, the board includes six alternate Directors who may act in the absence of the Principal Director. The WMATA Board is responsible for the mass transit plan for the Washington Metropolitan Area Transit Zone, which includes the Dulles Corridor.

On November 21, 2002 the WMATA Board of Directors recommended modification of the Adopted Regional System (ARS) to include the Metrorail Alternative (T6/Y15). On December 19, 2002, the Commonwealth Transportation Board (CTB) concurred with the WMATA Board and formally selected and approved the Metrorail Alternative (T6/Y15) for the project. The Boards of Supervisors for Fairfax and Loudoun counties, the Town of Herndon, and MWAA endorsed the selection of this proposed LPA.

## APPENDIX A: LIST OF PREPARERS

| | |
|---|---|
| **FEDERAL TRANSIT ADMINISTRATION** | Brian Glenn, *Director, Washington D.C. Metropolitan Office*<br>Deborah R. Burns, *Senior Planner, Washington D.C. Metropolitan Office*<br>A. Joseph Ossi, *Environmental Planner, Office of the Human and Natural Environment*<br>Patricia Kampf, *Transportation Program Specialist*<br>Sharon Pugh, *Senior Transportation Planner* |
| **VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION** | Corey Hill, *Director, Administration and Capital Projects*<br>Karl A. Rohrer, AICP, *Project Manager* |
| **WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY** | P. Takis Salpeas, *Assistant General Manager*<br>Ik Pyo Hong, AIA, *Director of Extensions*<br>John M. Dittmeier, P.E., *Acting Project Manager*<br>James Ashe, P.E., CPG, *Manager, Environmental Planning and Compliance (through 7/2003)*<br>Tom Crone, *Assistant Project Manager, Controls*<br>Neil Nott, *Assistant Project Manager, Facilities*<br>Dan Shiau, *Assistant Project Manager, Line and Systems* |
| **DMJM/DELEUW, a joint venture** | Diana Mendes, AICP, *Project Manager*<br>Herbert Spooner, P.E., *Project Manager (through 7/2003)*<br>Oscar Gonzalez, AICP, *Deputy Project Manager, Environmental and Planning*<br>Sina Raouf, AICP, *Deputy Project Manager, Environmental and Planning (through 9/2003)*<br>John Sheldon, P.E, *Deputy Project Manager, Finance and Administration*<br>Paul Elman, P.E., *Deputy Project Manager, Line and Systems Engineering*<br>James A. Gast, AIA, *Deputy Project Manager, Facilities (through 7/2003)*<br>Anne McNulty Darnall, *Environmental Manager*<br>Chris Bell, AICP, *Transportation Planning and Operations Manager*<br>Kristen D. Ahlfeld, AICP, *EIS Manager*<br>Jennifer Clinger, *Land Use/ Socioeconomic Planning Manager*<br>Kevin Hammond, *Land Use/Socioeconomic Planning*<br>Terri Morrell, AICP, *Environmental Planning*<br>Elizabeth Federico, *Environmental Planning*<br>Kasey May, *Environmental Planning*<br>Kenneth Mobley, AICP, *Senior Technical Advisor*<br>Mary Raulerson, AICP, *Senior Technical Advisor*<br>Jessica Shickman, *Alternatives Analysis*<br>Cindy Auman, *Cultural Resources* |

| | |
|---|---|
| **DMJM/DELEUW, a joint venture (continued)** | Elizabeth Crowell, Ph.D., *Cultural Resources (through 2/2003)*<br>Laurie Paonessa, *Cultural Resources*<br>Simone Moffett, *Cultural Resources*<br>John S. Bender, *Environmental Planning*<br>Robert Hertz, AICP, *Environmental Planning*<br>Peter Magaro, *Environmental Planning*<br>Travis Forden, *Database*<br>Paul Rostolsky, *Geographic Information Systems*<br>David Nelson, *Graphics Design Manager*<br>Nolen Strals, *Graphics Design*<br>Narobi Thomas, *Graphics Design (through 7/2003)*<br>Christopher LaRue, *QA/QC Coordinator* |
| **PARSONS BRINCKERHOFF QUADE & DOUGLAS** | Hanan A. Kivett, AIA, *Deputy Project Manager, Facilities*<br>Jeff Parrish, Project Coordinator |
| **AECOM CONSULTING TRANSPORTATION GROUP** | Jeffrey Bruggeman, *Patronage* |
| **KM CHNG ENVIRONMENTAL, INC** | David Ernst, *Air Quality*<br>Thomas Herzog, *Noise & Vibration*<br>Richard Letty, *Noise & Vibration* |
| **COASTAL RESOURCES, INC.** | Bridgette Grillo, *Natural Resources*<br>David Smith, PWS, *Natural Resources*<br>Betsy Weinkam, *Natural Resources*<br>Gary Jellick, *Natural Resources* |
| **EEE CONSULTING** | Sharon Harless, *Hazardous Materials*<br>Nadine Robertson, *Hazardous Materials* |
| **FITZGERALD & HALLIDAY** | Michael Flood, *Traffic*<br>William Wuensch, *Traffic*<br>Charles Smith, *Traffic*<br>Carla Tillery, *Traffic*<br>Sylvie Zajac, *Traffic* |
| **MANUEL PADRON & ASSOCIATES** | James Baker, *Operations Planning* |
| **TRAVESKY & ASSOCIATES, LTD.** | Marie B. Travesky, *Public Involvement Manager*<br>Jamie C. Croney, *Public Involvement*<br>Joan DuBois, *Public Involvement*<br>Denise H. Nugent, *Public Involvement*<br>F. Tracey Pilkerton, *Public Involvement*<br>Jennifer Christie, *Public Involvement* |

# Supplemental Draft EIS Recipients List

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
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| George | Allen | Senator | US Senate | | 1 | |
| John W. | Warner | Senator | US Senate | | 1 | |
| Thomas M. | Davis | 11th District | US House of Representatives | | 1 | |
| James P. | Moran | 8th District | U.S. House of Representatives | | 1 | |
| Frank R. | Wolf | 10th District | U.S. House of Representatives | | 1 | 1 |
| Dan | Scandling | Chief of Staff | Office of Congressman Frank Wolf | | 1 | 1 |
| Leslie | Byrne | 34th District | Virginia State Senate | | 1 | |
| Kenneth | Cuccinelli | 37th District | Virginia State Senate | | 1 | |
| Janet | Howell | 32nd District | Virginia State Senate | 1 | 1 | |
| William | Mims | 33rd District | Virginia State Senate | | 1 | |
| Mary Margaret | Whipple | 31st District | Virginia State Senate | | 1 | |
| Richard | Black | 32nd District | Virginia House of Delegates | | 1 | |
| Robert | Brink | 48th District | Virginia House of Delegates | | 1 | |
| Vincent F. | Callahan | 34th District | Virginia House of Delegates | | 1 | |
| Jeannemarie | Devolites | 35th District | Virginia House of Delegates | | 1 | |
| Kenneth R. | Plum | 36th District | Virginia House of Delegates | 1 | 1 | |
| Gary | Reese | 67th District | Virginia House of Delegates | | 1 | |
| Thomas | Rust | 86th District | Virginia House of Delegates | | 1 | |
| James M. | Scott | 53rd District | Virginia House of Delegates | 1 | 1 | |
| Sharon | Bulova | Braddock District | Fairfax County Board of Supervisors | | 1 | |
| Gerald | Connolly | Providence District | Fairfax County Board of Supervisors | 1 | 6 | |
| Michael | Frey | Sully District | Fairfax County Board of Supervisors | | 1 | |
| Penelope | Gross | Mason District | Fairfax County Board of Supervisors | | 1 | |
| Catherine | Hudgins | Hunter Mill District | Fairfax County Board of Supervisors | 1 | 6 | |
| Gerald | Hyland | Vice Chair, Mt. Vernon | Fairfax County Board of Supervisors | | 1 | |
| Dana | Kauffman | Lee District Supervisor | Fairfax County Board of Supervisors | | 1 | |
| Elaine | McConnell | Springfield District | Fairfax County Board of Supervisors | | 1 | |
| Stuart | Mendelsohn | Dranesville District | Fairfax County Board of Supervisors | | 6 | |
| William | Bogard | Sugarland Run | Loudoun County Board of Supervisors | 1 | 1 | |
| James | Burton | Mercer | Loudoun County Board of Supervisors | | 1 | |
| Eugene | Delgaudio | Sterling | Loudoun County Board of Supervisors | | 1 | |
| Chuck | Harris | Broad Run | Loudoun County Board of Supervisors | 1 | 1 | |
| Mark | Herring | Leesburg | Loudoun County Board of Supervisors | | 1 | |
| J. Drew | Hiatt | Dulles | Loudoun County Board of Supervisors | | 1 | |
| Sally | Kurtz | Catoctin | Loudoun County Board of Supervisors | | 1 | |
| Eleanor | Towe | Blue Ridge | Loudoun County Board of Supervisors | | 1 | |
| Scott | York | Chairman at-Large | Loudoun County Board of Supervisors | | 1 | |
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| Daniel | Gardner | Mayor | City of Falls Church | 1 | 1 | |
| David | Snyder | Council Member | City of Falls Church | 1 | | |
| Richard | Thoesen | Mayor | Town of Herndon | 1 | 1 | |
| Kristen C. | Umstattd | Mayor | Town of Leesburg | 1 | | |
| M. Jane | Seeman | Mayor | Town of Vienna | | 1 | |
| Anthony | Williams | Mayor | District of Columbia | | 1 | |
| Robert | Ehrlich | Governor | State of Maryland | | 1 | |
| Mark | Warner | Governor | Commonwealth of Virginia | | 1 | |

APPENDIX B: Supplemental Draft EIS Recipients

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
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| William | Leighty | Chief of Staff, Office of Governor | Commonwealth of Virginia | | 1 | 1 |
| Douglas | Duncan | County Executive | Montgomery County | | 1 | |
| Don | Klima | Director | Advisory Council on Historic Preservation | | 1 | |
| Catherine | Lang | Director | Federal Aviation Administration | | 1 | 1 |
| Terry | Page | Manager | Federal Aviation Administration | 1 | | |
| Roberto | Fonseca-Martinez | Division Administrator | Federal Highway Administration | | 1 | 1 |
| Tarsem | Lal | | Federal Highway Administration | | 1 | 1 |
| Ed | Sundra | I-495 Beltway Manager | Federal Highway Administration | | 1 | 1 |
| Deborah | Burns | Senior Planner | Federal Transit Administration | | 1 | 1 |
| Brian | Glen | Director, Metropolitan Office | Federal Transit Administration | | 1 | 1 |
| Patricia | Kampf | Transportation Program Specialist | Federal Transit Administration | | 1 | 1 |
| A. Joseph | Ossi | Environmental Planner | Federal Transit Administration | | 10 | 10 |
| Sharon | Pugh | Senior Transportation Planner | Federal Transit Administration | | 1 | 1 |
| Herman | Shipman | Acting Regional Administrator | Federal Transit Administration | | 1 | 1 |
| Patricia E. | Gallagher | Executive Director | National Capital Planning Commission | | 1 | 1 |
| Patrick | Gregerson | | National Park Service | | 1 | 1 |
| Tony | Canuso | | Transportation Construction Services, Inc | | 1 | 1 |
| Elaine | Dezenski | Direct Maritime, Land, Cargo | Transportation Security Administration | 1 | | |
| Scott | McHugh | Federal Security Director | Transportation Security Administration | 1 | | |
| Bruce F. | Williams | Chief, NoVA Regulatory Sect | U.S. Army Corps of Engineers | | 1 | |
| Cynthia | Wood | | U.S. Army Corps of Engineers | | 1 | 1 |
| Mary Ann | Wilson | Virginia State Coordinator | U.S. Department of Housing & | | 1 | |
| Willie | Taylor | Direc, Environ Compliance | U.S. Department of Interior | | 12 | 12 |
| Bob | Brown | | U.S. Department of Transportation | | 1 | |
| William | Arguto | NEPA/Fed Fac Team Leader | U.S. Environmental Protection Agency | 1 | | |
| Peter | Stokely | | U.S. Environmental Protection Agency | | 1 | 1 |
| M. Denise | Doetzer | Virginia State Conservationist | U.S.D.A Natural Resoures Conservation Service | 1 | | |
| William | Hester | Virginia Field Office | U.S. Fish and Wildlife Service | | 1 | 1 |
| Bill | Crockett | Manager | Wolf Trap Nat'l Park for Performing Arts | | 1 | 1 |
| Charles | Baummer | | Metropolitan Washington Airports Authority | | 1 | 1 |
| James | Bennett | President & CEO | Metropolitan Washington Airports Authority | 1 | 1 | |
| Jonathan | Gaffney | Manager of External Affairs | Metropolitan Washington Airports Authority | 1 | | |
| Mike | Hackett | | Metropolitan Washington Airports Authority | | 2 | 2 |
| William | Lebegern | | Metropolitan Washington Airports Authority | | 1 | 1 |
| Henry | Ward | Arche & Historic Sites Coord | Metropolitan Washington Airports Authority | | 1 | 1 |
| Ronald | Kirby | Transp Planning Director | Metropolitan Washington Council of Governm | | 1 | 1 |
| Michael | Rogers | Executive Director | Metropolitan Washington Council Of Governm | | 1 | |
| Mark | Gibb | Executive Director | Northern Virgina Regional Commission | | 1 | |
| Daniel | Iglhaut | Land Admin and Planning | Northern Virginia Regional Park Authority | 1 | | |
| Katherine | Rudacille | Manager Land Admin & Planning | Northern Virginia Regional Park Authority | | 1 | 1 |
| Diane | Hoffman | Administrator | No. Virginia Soil & Water Coservation District | | 1 | |
| Richard | Taube | | No. Virginia Transportation Commission | | 2 | |
| Trudye | Johnson | Executive Director | MD Nat'l Cap'l Park & Planning Commission | | 1 | |
| | | | Washington Metropolitan Transit Commis | | 1 | |
| Lou | Farber | | Washington Suburban Transit Commission | | 1 | |
| Catherine | Harold | | Chesapeake Bay Local Assistance Depart | | 1 | |
| Whittington | Clement | Secretary of Transportation | Commonwealth of Virginia | 1 | | |

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|---|---|---|---|---|---|---|
| Pierce | Homer | DepSecretary of Transport | Commonwealth of Virginia | 1 | | |
| Ambrose | Bailey | Fredericksburg District | Commonwealth Transportation Board | 1 | | |
| Jim | Bowie | Bristol District | Commonwealth Transportation Board | 1 | | |
| Julia | Connally | At-Large Urban | Commonwealth Transportation Board | 1 | | |
| John | Davies, III | Culpeper District | Commonwealth Transportation Board | 1 | | |
| Helen | Dragas | At-Large Urban | Commonwealth Transportation Board | 1 | | |
| James | Keen | At-Large Rural | Commonwealth Transportation Board | 1 | | |
| J. Kenneth | Klinge | Northern Virginia District | Commonwealth Transportation Board | | 1 | 1 |
| Harry | Lester | Hampton Road District | Commonwealth Transportation Board | 1 | | |
| Gerald | McCarthy | Richmond District | Commonwealth Transportation Board | 1 | | |
| Leonard S. | Mitchel | At-Large Urban | Commonwealth Transportation Board | 1 | | |
| Phillip | Stone | Staunton District | Commonwealth Transportation Board | 1 | | |
| Onzlee | Ware | Salem District | Commonwealth Transportation Board | 1 | | |
| Hunter | Watson | At-Large Rural | Commonwealth Transportation Board | 1 | | |
| Kenneth Spencer | White | Lynchburg District | Commonwealth Transportation Board | 1 | | |
| Keith | Tignor | Off of Plant & Pest Serv | VA Dept. of Agriculture & Consumer Services | | 1 | |
| Rusty | Harrington | Senior Aviation Planner | VA Dept. of Aviation | | 1 | |
| Lawrence | Gavan | Environmental Engineer | VA Dept. of Conservation & Recreation | 1 | | |
| Derral | Jones | Environmental Program | VA Dept. of Conservation & Recreation | | 4 | |
| John | Bowden | Northern Regional | VA Dept. of Environmental Quality | | 1 | |
| Joan | Crowther | Resources Develop Super | VA Dept. of Environmental Quality | | 1 | |
| Charles | Ellis | Environmental Review Coordinator | VA Dept. of Environmental Quality | 1 | 1 | |
| Martin | Ferguson | | VA Dept. of Environmental Quality | | 1 | |
| John | Fisher | Environmental Impact Review | VA Dept. of Environmental Quality | | 1 | |
| Charles | Forbes | Regional Permit Manager | VA Dept. of Environmental Quality | | 1 | |
| Ellen | Gilinsky | Division of Water | VA Dept. of Environmental Quality | | 1 | |
| Ellie | Irons | EIR Program Manager | VA Dept. of Environmental Quality | | 1 | |
| Tom | Modena | Division of Waste | VA Dept. of Environmental Quality | | 1 | |
| James | Monticello | | VA Dept. of Environmental Quality | | 1 | |
| Kotur | Narasimhan | Division of Air | VA Dept. of Environmental Quality | | 1 | |
| Anne | Newsom | Environmental Impact Review | VA Dept. of Environmental Quality | | 1 | |
| Michael | Foreman | | VA Dept. of Forestry | | 1 | |
| Brian | Moyer | | VA Dept. of Game & Inland Fisheries | | 1 | |
| Alan | Weber | | VA Dept. of Health | | 1 | |
| Ethel | Eaton | | VA Dept. of Historic Resources | | 1 | |
| David | Edwards | Director, No Regional Preserv | VA Dept. of Historic Resources | 1 | | |
| Kathleen S. | Kilpatrick | Director | VA Dept. of Historic Resources | | 1 | 1 |
| Gerald | Wilkes | Senior Geologist | VA Dept. of Mines, Minerals & Energy | | 1 | |
| Chip | Badger | Assist Director for Public Transport | VA Dept. of Rail & Public Transportation | | 1 | 1 |
| Corey | Hill | Director of Admin & Capital Project | VA Dept. of Rail & Public Transportation | | 2 | 2 |
| Karen | Rae | Director | VA Dept. of Rail & Public Transportation | | 2 | 2 |
| Karl | Rohrer | Project Manager | VA Dept. of Rail & Public Transportation | | 3 | 1 |
| Chris | Detmer | | VA Department of Transportation | | 1 | 1 |
| Philip | Shucet | Commissioner | VA Department of Transportation | 1 | | |
| Katherine | Tracy | Asst. Secretary to the CTB | VA Department of Transportation | 1 | | |
| Ken | Wilkinson | Environmental Quality | VA Department of Transportation | | 1 | 1 |
| Angel | Dean | Environmental Division | VA Department of Transportation | | 2 | |

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| David | Grimes | Environmental Division | VA Department of Transportation | | 1 | |
| Fatemeh | Allahdoust | Senior Transportation Engineer | VA Department of Transportation-NOVA | 1 | 2 | 2 |
| Thomas | Farley | District Administrator | VA Department of Transportation-NOVA | | 1 | |
| Susan | Shaw, P.E. | Location & Design Engineer | VA Department of Transportation-NOVA | | 1 | 1 |
| JoAnne | Sorenson | Environmental Quality | VA Department of Transportation-NOVA | | 1 | |
| Rob | McClintock | Research Director | VA Economic Development Partnership | | 1 | |
| Tony | Watkinson | | Virginia Marine Resources Commission | | 1 | |
| Peter | Sklannik | | Virginia Railway Express | 1 | | |
| John | Porcari | Secretary | Maryland Department of Transportation | | 1 | |
| Henry | Kay | Director of Planning | Maryland Mass Transit Administration | | 1 | |
| John | Dittmeier | Project Manager, Dulles | WMATA | | 1 | 1 |
| Jack | Requa | Chief Operating Off for Bus | WMATA | | 1 | |
| Glenn | Millis | Director | WMATA ADAP, 7A10E | 1 | | |
| Nancy | Grzesik | Director | WMATA ADMT | | 1 | |
| David | Nedd | Schedules | WMATA ADMT | | 1 | |
| Irving | Nemi | Mngr, Schedule and Estim | WMATA ADMT 4F08 | 1 | | |
| Jim | Ashe | Mngr, Environment Planning & Compli | WMATA ADMT, 403B | | 1 | 1 |
| J. Roderick | Burfield | Director | WMATA BFIN | | 1 | |
| Kevin | Newman | Superintendent | WMATA BMNT Southeast | | 1 | |
| David | Catania | | WMATA Board of Directors | | 1 | |
| Jim | Graham | WMATA Board Chairman | WMATA Board of Directors | | 1 | |
| Marcell | Solomon | | WMATA Board of Directors | | 1 | |
| Gladys | Mack | | WMATA Board of Directors | | 1 | |
| Katherine | Hanley | | WMATA Board of Directors | 1 | 1 | |
| Christopher | Zimmerman | | WMATA Board of Directors | | 1 | |
| Carlton | Sickles | | WMATA Board of Directors | | 1 | |
| William | Euille | | WMATA Board of Directors | | 1 | |
| Calvin | Nophlin | | WMATA Board of Directors | | 1 | |
| Robert | Smith | | WMATA Board of Directors | | 1 | |
| Decatur | Trotter | | WMATA Board of Directors | | 1 | |
| Richard | Stevens | Director | WMATA BPAD 6F24 | | 1 | 1 |
| Gregory | Walker | Senior Assistant Director | WMATA BPPD 6F17 | 1 | | |
| Patrick | Porzillo | Chief Engineer | WMATA CENG 5F | 1 | | |
| Perrilyn | Fanfulik | | WMATA CENG PMC | | 1 | |
| Joan | LeLacheur | Manager, Environmental Services | WMATA CENG PMC | | 1 | |
| Peter | Benjamin | Chief Financial Officer | WMATA CFO 605 | 1 | | |
| Mary | Bucklew | Executive Assistant | WMATA COM 7E10 | 1 | | |
| Leona | Agouridis | Assistant General Manager | WMATA Communications, COM 7D16 | | 1 | 1 |
| Tom | Dorrier | TSDV Counsel | WMATA COUN | | 1 | |
| William | Caldwell | AGC GL Land Grants | WMATA COUN 2C08 | | 1 | 1 |
| Carol | O'Keeffe | Principal Deputy General Counsel | WMATA COUN, 2C09 | | 1 | |
| James | Gallagher | Deputy General Manager | WMATA DGMGR, OPER 204 | | 1 | 1 |
| Wayne | Keeler | Manager, Civil/Row | WMATA ENGA 4C06 | | 1 | |
| Ed | Riley | Manager, Architecture | WMATA ENGA 4D06 | 1 | | |
| Harry | Lupia | Director | WMATA ENGA 4F14 | 1 | | |
| Don | Falken | Chief, Surveys and Mapping | WMATA ENGA Navy Yard | 1 | | |
| Ik Pyo | Hong | Director | WMATA EXTN | | 1 | 1 |

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|---|---|---|---|---|---|---|
| Tom | Crone | Assist Project Mngr - Budget Cost | WMATA EXTN | | 1 | |
| Ramen | De | Station Coordinator | WMATA EXTN | | 1 | |
| Neil | Nott | Assistant Project Manager, Stations | WMATA EXTN | 1 | | |
| Dan | Shiau | Assistant Project Manager - Line | WMATA EXTN | | 1 | 1 |
| Nadeem | Tahir | Senior Project Manager | WMATA EXTN | 1 | | |
| Burton | Bouldry | | WMATA FIMA 6D22 | 1 | | |
| Richard | White | General Manager | WMATA GMGR | 1 | | |
| Shiva | Pant | Government Relations | WMATA GOVR | | 1 | 1 |
| Denton | Kent | Director | WMATA LAND | | 1 | |
| Mark | Meister | Manager, Asset Management | WMATA LAND 5A18 | 1 | | |
| K-P | Heinemeyer | Assistant Director | WMATA LAND 5B20 | 1 | | |
| Malcolm | Marshal | | WMATA LAND 5B20 | 1 | | |
| Jane | Taylor | Directory | WMATA MKTG | 1 | | |
| Lisa | Farbstein | Media Relations | WMATA MREL 2G04 | | 1 | |
| Ray | Feldmann | Director | WMATA MREL, 2G08 | | 4 | |
| Bea | Hicks | Chipef Operations Liason | WMATA OLIA 406 | | 1 | 1 |
| David | Robinson | | WMATA OLIA 4F01 | | 1 | |
| Tom | Robinson | | WMATA OLIA 4F05 | | 1 | |
| Charles | Biro | | WMATA OLIR Fort Trotten | | 1 | |
| James | Hughes | Director | WMATA OPAS 7A18 | | 1 | 1 |
| Robert | Orr | Manager, Schedules and Traffic | WMATA OPAS 7C08 | 1 | | |
| Debra | Johnson | | WMATA PCOM | | 1 | |
| Paul | Gillum | Director | WMATA PLNT PENN | 1 | | |
| Edward | Thomas | Assistant General Manager | WMATA PLSP 8F04A | 1 | | |
| Lemuel | Proctor | Chief Operating Officer | WMATA RAIL, 5G14 | 1 | | |
| Fred | Goodine | Assistant General Manager | WMATA SARP 2A05 | 1 | | |
| P. | Wilkins | | WMATA SCOS 215 | 1 | | |
| Harold | Bartlett | Secretary & COS | WMATA SECT, SCOS 202 | | 1 | 1 |
| William | Paine | | WMATA SYSP 4B | 1 | | |
| Pock | Boon | Environ Mngr, Mechanical/Electrical | WMATA SYSP 4C01 | 1 | | |
| Jack | Campbell | Assistant Project Manager, Largo | WMATA SYSP Largo | 1 | | |
| Kanu | Desai | | WMATA SYSP Rosslyn | 1 | | |
| Richard | Spatz | Director | WMATA SYSP Rosslyn | 1 | | |
| P. Takis | Salpeas | Assistant General Manager | WMATA TSDV | | 8 | 1 |
| Ron | Carlee | County Manager | Arlington County | 1 | | |
| James | Hamre | Transit Coordinator, Planning Divis | Arlington County | | 1 | |
| Leslie | Hotaling | Director | District of Columbia Dept. Public Works | | 1 | |
| Anthony | Griffin | County Executive | Fairfax County | 1 | | |
| Fred | Selden | Planning Division Director | Fairfax Country Dept. of Planning/Zoning | | 4 | 4 |
| John Wesley | White | Director | Fairfax County Dept. of Public Works | | 1 | 1 |
| Young Ho | Chang | Director of Transportation | Fairfax County Dept. of Transportation | 1 | 4 | 4 |
| Leonard | Wolfenstein | | Fairfax County Dept. of Transportation | | 1 | |
| Sterling | Wheeler | Branch Chief, Policy Plng/Develop | Fairfax County Dept. Planning/Zoning | | 1 | |
| Gerald | Gordon | Council President | Fairfax County Economic Development | | 1 | |
| Michael | Neuhard | | Fairfax County Fire & Rescue Department | | 1 | |
| Catherine | Bennett | | Fairfax County Non-Motorized Transp Comm | | 1 | |
| Donald | Emerson | | Fairfax County Non-Motorized Transp Comm | | 1 | |

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| Wade | Smith | | Fairfax County Non-Motorized Transp Comm | | 1 | |
| Bruce | Wright | | Fairfax County Non-Motorized Transp Comm | 1 | | |
| Merni | Fitzgerald | Director | Fairfax County Office of Public Affairs | 1 | | |
| Karen | Lanham | Planning Section Supervisor | Fairfax County Park Authority | 1 | 1 | |
| Frank | de la Fe | | Fairfax County Planning Commission | 1 | | |
| J. Thomas | Manger | Chief of Police | Fairfax County Police Department | | 1 | |
| Daniel | Domenech | Superintendent | Fairfax County Public Schools | | 1 | |
| Arthur | Purves | President | Fairfax County Taxpayers Alliance | 1 | | |
| Steven | Weisberger | Manager, Planning Branch | Fairfax County Water Authority | | 1 | |
| Kirby | Bowers | County Administrator | Loudoun County | 1 | | |
| Terri | Laycock | Assistant to County Administrator | Loudoun County | | 1 | 1 |
| Jana | Lynott | Dept. of Planning | Loudoun County | 1 | | |
| Julie | Pastor | Director of Planning | Loudoun County | | 1 | 1 |
| Lawrence | Rosenstrauch | Director, Economic Development | Loudoun County | | 1 | |
| Chip | Taylor | Office of Transportation Services | Loudoun County | | 1 | 1 |
| Cynthia | Welsh | Director of Parks and Recreation | Loudoun County | | 1 | |
| Terrance | Wharton | Director, Building and Development | Loudoun County | | 1 | 1 |
| John | Clark | Director | Loudoun County Office of Transportation | | 1 | 1 |
| Willie | Best | | City of Falls Church | | 1 | 1 |
| Henry | Bibber | Director | Town of Herndon | | 1 | |
| Brent | Wilkinson | Senior Planner | Town of Vienna | | 1 | |
| | | | Amalgamated Transit Union | | 1 | |
| | | | International Brotherhood of Teamsters | | 1 | |
| Denise | Kelleher | | Arlington Central Library | | 1 | 1 |
| Susan | Bell | | Ashburn Farm Association | | 1 | 1 |
| Carolyn | Herger | Branch Manager | Dolley Madison Community Library | | 1 | 1 |
| Carolyn | Watson | | Eastern Loudoun Regional Library | | 1 | 1 |
| Suzanne | Levy | | Fairfax City Regional Library | | 1 | 1 |
| William | Lecos | President/CEO | Fairfax County Chamber of Commerce | | 1 | |
| Mary | McMahon | | Falls Church Library | | 1 | 1 |
| Mary | Ellis | | Great Falls Community Library | | 1 | 1 |
| Robert | Day | Executive Director | Greater Falls Church Chamber of Commerce | | 1 | |
| Tracey | White | President & CEO | Greater Reston Chamber of Commerce | 1 | 1 | 1 |
| Eileen | Curtis | Executive Director | Herndon Dulles Chamber of Commerce | | 1 | |
| Randy | Collins | President | Loudoun County Chamber of Commerce | | 1 | |
| Elise Neil | Bengtson | Executive Director | McLean Chamber of Commerce | | 1 | |
| Sheila | Whetzel | | Middleburg Library | | 1 | 1 |
| Carolyn | Koehler | Branch Manager | Patrick Henry Community Library | | 1 | 1 |
| Leah | Bromser-Kloeden | | Purcellville Library | | 1 | 1 |
| Dennis | Kern | Executive Director | Reston Community Center | | 1 | 1 |
| Nadia | Taran | Branch Manager | Reston Regional Library | | 1 | 1 |
| Ellen | Henry | | Rust Library | | 1 | 1 |
| Mary | Lynch | | Sterling Library | | 1 | 1 |
| June | Sullivan | | Thomas Balch Library for Local History | | 1 | 1 |
| Tina | Cunningham | Branch Manager | Tysons-Pimmit Regional Library | | 1 | 1 |
| Francis | Powers, Jr. | President | Vienna-Tysons Regional Chamber of Commer | | 1 | |
| | | | 8350 Leesburg Pike LLC | | 1 | |

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|---|---|---|---|---|---|---|
| James | Clarke | Vice President for Legislative Affairs | Action Committee for Transit | 1 | | |
| Mr. | Cleary | | Airline Tariff Publishing Company | | 1 | |
| | | Attn: Tax Department | Alamo Rent A Car | | 1 | |
| Joseph | Henderson | Alder Branch Management | Alder Branch Lincoln LLC | 1 | 1 | |
| | | | Alexander Sims and Templeton Partnership | | 1 | |
| Donna | Reynolds | Director of Community Relations | American Lung Assn. of Virginia | 1 | | |
| Michael | Bartscherer | | AOL Time Warner | | 1 | |
| Candace | Smith | | Associated Press | 1 | | |
| David | Ross | President | Atlantic Realty Companies, Inc. | | 1 | |
| Steven | Jones | | Audubon Tree Experts | 1 | | |
| | | | Austin Dulles Equities, LP | | 1 | |
| | | | BF Real Estate US I LP | | 1 | |
| Bryon | Barlow | | B F Saul Co | | 1 | |
| | | | Bilene International | | 1 | |
| Scott | Boroczi | Trustee | BNY Western Trust Company | | 1 | |
| Ralph | Shrader | Chairman & CEO | Booz-Allen & Hamilton | | 1 | |
| Jack | Burkart | | Boston Properties, Inc. | 1 | | |
| Peter | Johnston | Senior Vice President | Boston Properties, Inc. | | 1 | |
| | | | BP Reston Eastgate LLC | | 1 | |
| William | Vincent | General Counsel | Breakthrough Technologies Institute | 1 | 1 | |
| Robert | Buchanan | | Buchanan Partners, LLC | 1 | | |
| | | Ref: Dulles Airport | Budget Rent-A-Car | | 1 | |
| | | | Calais Corporation | | 1 | |
| Lisa | Lapane | | Cambridge Management | | 1 | |
| | | | Cars DB1 LLC | | 1 | |
| | | Property Tax Services | Carr Realty LP | | 1 | |
| | | | Carrington Community Association Inc. | | 1 | |
| Rich | Benton | | Centennial Contractors Enterprises | 1 | | |
| Anne | Armstrong | Director | Center for Innovative Technology | | 1 | |
| Charles | Smith | | CESC Commerce Executive Park LLC | | 1 | |
| | | | Chain Bridge Hospitality Corporation | | 1 | |
| Ming | Leong | | Channel 7/Newschannel 8 | 1 | | |
| Scott | Sterling | Vice President | Charles E. Smith Commercial Realty L.P. | | 1 | |
| Andy | Cherner | | Cherner Lincoln Mercury | | 1 | |
| Clarence | Bishop | | Chesapeake Region 2012 Coalition | 1 | | |
| J. Hamilton | Lambert | | Claude Moore Charitable Foundation | 1 | | |
| Edward | Daniels | President | Clover Management Corporation | 1 | | |
| Laura | Olsen | | Coalition for Smarter Growth | 1 | | |
| Stewart | Schwartz | | Coalition for Smarter Growth | 1 | | |
| John | Motz | President | Commercial Condominium Management Co. | | 1 | |
| Mary Gayle | Holden | President | Committee for Dulles | | 1 | |
| | | Assistant Attorney General | Commonwealth of Virginia | | 1 | |
| Bruce | Pitts | | Comstock Homes, Inc. | 1 | | |
| Christopher | Clemente | | Comstock Partners LC | 1 | 1 | |
| | | | Connecticut General Life Insurance Co. | | 1 | |
| Mark | Looney | | Cooley Godward LLP | 1 | | |
| Barry | Mark | Regional Manager | Corporate Real Estate Office | | 1 | |

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| R. Kevin | Dougherty | Partner | Crimson Partners | | 1 | |
| Gregory | Hamm | | Crimson Partners | | 1 | |
| E. Bruce | Bennett | President | Crowell's Corner | 1 | | |
| Brian | McVay | Senior Managing Director | Cushman & Wakefield of Virginia, Inc. | | 1 | |
| | | | Dollar Rent-A-Car | | 1 | |
| Douglas | Carter | President | Douglas Carter Scott, Ltd. | 1 | | |
| | | | DSV Dulles Fox Mill, LP | | 1 | |
| Patricia | Nicoson | President | Dulles Corridor Rail Association | 1 | 1 | 1 |
| Joe | Stowers | | Dulles Corridor Rail Association | 1 | | |
| Chris | Antigone | | Dulles Gateway Associates, LLC | 1 | 1 | 1 |
| | | | Dulles Overlook, LLC | | 1 | |
| E. Thomas | Sines | Director of Operations | Dulles Greenway | | 2 | 1 |
| Paul | Lombardi | President and CEO | DynCorp | | 1 | |
| Dale | Ginevan | | Edgemoore Jarrett LP | | 1 | |
| Joe | May | | EIT Corporation | | 1 | |
| Yvonne | Jeziorski | General Manager | Embassy Suites Hotel Tysons Corner | | 1 | |
| Doris | Ray | | ENDependence Center of Northern Virginia | 1 | | |
| | | | Enterprise Leasing | | 1 | |
| Michael | Replogle | Transportation Director | Environmental Defense | 1 | | |
| | | | Equal Metro Access for All of Tysons Cor | 1 | | |
| | | | Fairbrook Business Park Associates | | 1 | |
| Sally | Ormsby | Chair, Legislation | Fairfax Cty. Federation of Citizen Assn. | 1 | | |
| Jean | Packard | Corresponding Secretary | Fairfax Cty. Federation of Citizen Assn. | 1 | | |
| George | Smith | Transportation Committee | Fairfax Cty. Federation of Citizen Assn. | 1 | | |
| Verlin | Smith | President | Farms & Acreage, Inc. Realtors | | 1 | |
| | | | Federal Republic of Germany | | 1 | |
| Ira | Jacoby | | Fountains at McLean Condo. Assn. | 1 | | |
| Mary | Kenny | | FR Pike 7 LP | | 1 | |
| William | Menda | V.P., Admin & Corp. Properties | Freddie Mac | | 1 | |
| Nancy | Houser | Director, Corporate Admin | Gannett Co., Inc. | 1 | | |
| Patricia | Blackburn | | Gates & Hudson | | 1 | |
| James | Evans | President | Greater Hillwood Citizens Association | 1 | 1 | |
| Robert | Pinkard | Transp & Environment Committee | Greater Washington Board of Trade | 1 | | |
| Steve | Braesch | | Greenebaum & Rose Associates | | 1 | |
| Clark | Tyler | President | Hallcrest Heights Associates, Inc. | | 1 | |
| Jim | Stevens | President | Hill Road Civic Association | 1 | | |
| W. Edward | Walter | Chief Operating Officer | Host Marriott Corporation | 1 | | |
| Jeannette | Twomey | | Hunter Mill Defense League | 1 | | |
| | | | Hunter Mill East LLC | | 1 | |
| John | Thoburn | | Hunter Mill East, LLC | 1 | 1 | |
| Francis | McDermott | | Hunton & Williams | 1 | | |
| James | Deuel | General Manager | Hyatt Dulles | 1 | 1 | |
| Marcia | McDevitt | President | Inlet Cluster | 1 | | |
| Jeffrey | Fairfield | | J. Harold Launders Trust | 1 | | |
| Jack | Herrity | | Jack Herrity & Associates | 1 | | |
| Ilan | Scharfstein | | JBG Companies | | 1 | |
| | | | Jemals Tysons Westwood LLC | | 1 | |

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| | | | John Sherwood, et al | | 1 | |
| Benjamin | Comm | Regional Director of Operations | Jones, Lang & LaSalle Americas, Inc. | | 1 | |
| Drew | Bush | | Journal Newspapers | 1 | | |
| Randy | Atkins | Managing Director | Julien J. Studley, Inc. | | 1 | |
| Manuel | Fernandez | | K and F, LC | | 1 | |
| Donald | Fisher | | Kaiser Fndn Health Plan Mid-Atlantic | | 1 | |
| Brian | Cullen | | Keane Enterprises | | 1 | |
| Jorge | Kfoury | Managing Partner | Kfoury Construction Group, Inc. | | 1 | |
| Bob | Farlow | | Koons Tysons Toyota | | 1 | |
| Eric | Peterson | Executive Director | LEADER | | 1 | 1 |
| Michael | Wright | President | Lemon Road CA | | 1 | |
| Peter | Rosen | Senior Development Director | Lerner Enterprises | | 1 | |
| Gail | Hunt | | Lillian Court Condominium Association | | 1 | |
| John | Lebeau | | Lincoln Property Company | | 1 | |
| Nancy | Willson | | Long & Foster | 1 | | |
| P. Wesley | Foster | | Long & Foster Companies, Inc. | 1 | | |
| Clarice | Dieter | | Loudoun ARC | 1 | | |
| James | Luehrs | | Luehrs Corporation | | 1 | |
| William | Nussbaum | | Mark Winkler Company | | 1 | |
| | | Property Tax Dept., #924.13 | Marriott Motor Hotels | | 1 | |
| Robert | Marsteller | | Marsteller Realty, Inc. | 1 | | |
| Thomson | Hirst | President | Mason Hirst Companies | 1 | 1 | 1 |
| Randolph | Sutliff | | McCandish & Lillard, P.C. | 1 | 1 | |
| Tracy | Baynard | Director | McGuireWoods, LLP | 1 | | |
| Adrienne | Whyte | Chairman | McLean Citizens Association | 1 | | |
| Chuck | Williams | | Metro Networks | 1 | | |
| Craig | Simpson | | Metro Washington Council AFL-CIO | 1 | | |
| Cary | Euwer, Jr. | President & CEO | Metropolitan Partnership, Ltd. | | 1 | |
| Michael | Horwatt | President | Michael Horwatt & Associates P.C. | 1 | | |
| John | Conrad | | Miller & Smith, Inc. | | 1 | |
| | | | Monument One LLC | | 1 | |
| Bob | Hughes | General Manager | Moore Cadillac Co | | 1 | |
| Robert | Gordon | | Mountain View Investment & Consulting, L | 1 | | |
| Phillip | Brady | President | National Automobile Dealers Assn. | | 1 | |
| Beth | Cogswell | | National Capital Area League of Women Vo | 1 | | |
| | | | National Car Rental System, Inc. | | 1 | |
| Sheldon | Petersen | Governor & CEO | Ntnl Rural Utilities Cooperative Finance Corpo | 1 | | |
| Joseph | Siekierski | | Ntnl Rural Utilities Cooperative Finance Corpo | | 1 | |
| Tim | Donahue | President | Nextel Communications, Inc. | | 1 | |
| James | Dyke | Chairman | Northern Virginia Roundtable | 1 | | |
| Robert | Chase | | No. Virginia Transportation Alliance | 1 | | |
| Eric | McComas | | Northwestern Investment Management Co. | | 1 | |
| | | | Nugget Joint Venture, LLC | | 1 | |
| John | Davey | | O'Malley, Miles, Nylen & Gilmore | | 1 | |
| Jack | Suchland | Facility Manager | Oracle Corporation | | 1 | |
| | | | Parkview Exec Ctr Joint Venture RLLP | | 1 | |
| Robert | Kullman | | Peacock Buick, Inc. | | 1 | |

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| George | Steiner | | Peacock Buick & Suzuki | | 1 | |
| Kristopher | Hoover | | Peter Lawrence Company | | 1 | |
| Jeff | Wiese | | Polo Fields Association | | 1 | |
| Lynn | Minnici | | Prentiss Properties | | 1 | |
| Michael | Cooper | | Prentiss Properties Acquisition Partners | 1 | | |
| Mark | Brungart | | Quadrangle Development Corporation | | 1 | |
| Elliot | Eder | | Rapid Transit Action Committee | 1 | | |
| | | | RBP & M LLC | | 1 | |
| | | | Realty Assoc. Fund III LP | | 1 | |
| Robert L. | Calhoun | | Redmon Boykin & Braswell | | 1 | |
| Don | Bachenberg | General Manager | Regency at McLean | | 1 | |
| Michael | McGuire | | Reliance Development Group | | 1 | |
| Steven | Stahl | | Reliance Insurance Company | | 1 | |
| Eric | Peterson | President | Restaurant Assn. of Metro. Washington | 1 | | |
| Gerald | Volloy | Executive Vice President | Reston Association | 1 | 1 | 1 |
| | | | Reston VA 939 LLC | | 1 | |
| | | | Richard Stohlman Family LP | | 1 | |
| Paul | Bradley | | Richmond-Times Dispatch | 1 | | |
| Samuel | Rocks | | Rocks Engineering Company | | 1 | |
| Robert | Hisoka | Owner & General Manager | Rosenthal Honda | | 1 | |
| Jeff | Mariani | | Rosenthal Nissan | | 1 | |
| Shahla | Batmanghelidj | | Rotonda | 1 | | |
| Colleen | Moorehead | | Rotonda | 1 | 1 | |
| Steve | Wright | General Manager | Rotonda Condominium Unit Owners Assn | 1 | 1 | 1 |
| Albert | Lord | | Sallie Mae | | 1 | |
| Dennis | Greene | | Security Storage Company of Washington | | 1 | |
| Roger | Diedrich | Land Use Chair | Sierra Club, Virginia Chapter | 1 | | |
| Eric | Hietala | | Signature Flight Support | | 1 | |
| Paul | St. Andre | | Springfield Interchange Information Ctr. | 1 | | |
| | | | Sprint Communications Company LP | | 1 | |
| Scott | McCaffrey | Managing Editor | Sun Gazette Newspapers | 1 | | |
| | | | Symphony Meadows LC | | 1 | |
| Thomas | Williamson | Vice President | Terrabrook, Reston | | 1 | |
| Charles | Veatch | | The Charles A. Veatch Company | | 1 | |
| Martin | Fage | Executive Vice President | The Mitre Corporation | | 1 | |
| G. Cory | DeSpain | | Toll Brothers | | 1 | |
| | | | Toll Road Investors Partnership II, LP | | 1 | |
| | | Tax Department | Toys R Us, Inc. | | 1 | |
| | | Portfolio Manager VA Region | TRC Pinnacle Towers LLC | | 1 | |
| Brian | Coulter | | TrizecHahn Reston | | 1 | |
| | | | Trulie Investment Corp. et al | | 1 | |
| W. James | Green | | TRW Systems Information & Technology Gp. | | 1 | |
| Philip | Odeen | President | TRW, Inc. | | 1 | |
| Kathleen | Jackson | Director | TYTRAN | 1 | | |
| Bill | Menda | | TYTRAN | 1 | | |
| Kathy | Hannon | | Tysons Corner Center/Wilmorite | | 1 | |
| Ken | Peduzzi | | Tysons Corner Hotel Co. Inc. | | 1 | |

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| | | | Tysons Corner Hotel Company | | 1 | |
| Rod | Renner | General Manager | Tysons Galleria | | 1 | |
| Robert | Tanenbaum | | Tysons II Land Co. LLC | | 1 | |
| Tom | Sims | General Manager | Tysons Westpark Hotel | | 1 | |
| Carli | Flippen | | Urban Transportation Solutions | 1 | | |
| Robin | Burke | | USAA Realty Co., LP | | 1 | |
| | | | V-Dulles West LLC & V-DW Remainder | | 1 | |
| Allen | Muchnick | President | Virginia Bicycling Association | 1 | | |
| Mark | McGregor | Chief Executive Officer | Virginia Regional Transportation Association | | 1 | |
| Charles | Poulson | | Walker and Company | 1 | | |
| Christopher | Walker | President | Walker and Company | 1 | | |
| | | | Walker FLP Limited Partnership | | 1 | |
| Elizabeth | Baker | | Walsh, Colucci, Stackhouse, Emrich & Lubeley | 1 | | |
| William | Keefe | | Walsh, Colucci, Stackhouse, Emrich & Lubeley | 1 | | |
| Randall | Minchew | | Walsh, Colucci, Stackhouse, Emrich & Lubeley | 1 | | |
| Martin | Walsh | | Walsh, Colucci, Stackhouse, Emrich & Lubeley | 1 | | |
| Jeni | Hornback | | Walter L. Phillips, Inc. | 1 | | |
| Leo | Schefer | | Washington Airports Task Force | 1 | 1 | |
| Carol | Welti | | Washington Airports Task Force | 1 | | |
| Ken | Reid | | Washinton Information Source Company | 1 | | |
| Lyndsey | Layton | Transportation Reporter | Washington Post | 1 | | |
| Brian | Moran | Asset Manager | Washington Real Estate Investment Trust | | 1 | |
| Jon | Ward | | Washington Times | 1 | | |
| Peter | Davey | President | West Falls Village HOA | 1 | | |
| Kathryn | MacLane | Executive Vice President | WEST*GROUP | 1 | | |
| | | | West*Group Properties, LLC | | 1 | |
| Thomas | Fleury | | West*Group Properties, LLC | | 1 | 1 |
| Mark | Foerster | Executive Vice President | Wilmorite Property Management, LLC | 1 | 1 | |
| | | | Wolf Trap Foundation for the Performing Arts | | 1 | |
| Charles | Walters, Jr. | Executive Vice President | Wolf Trap Foundation for the Performing Arts | | 1 | |
| | | | Wolftrap Meadows Homeowners Association | | 1 | |
| Ede | Jermin | | WRC-TV4 | 1 | | |
| Steve | Eldridge | | WTOP-AM | 1 | | |
| Natalie | Joost | | WTTG-Fox 5 | 1 | | |
| | | | Heirs of Ilse Sanderson | 1 | | |
| Fadwan | (illegible) | | | 1 | | |
| Faila | Alan | | | 1 | | |
| Daniel | Alcorn | | | 1 | | |
| Gloria | Allender | | | 1 | | |
| Grace | Alpert | Laurence Alpert | | 1 | | |
| John | Anderson | | | 1 | | |
| George | Andreas | Ursula Andreas, Tr. | | | 1 | |
| Joe | Apple | | | 1 | | |
| Kin-Sing | Au | Florence Au | | | 1 | |
| Russell | Babington | | | 1 | | |
| Alfio | Bado | Helena Bado | | 1 | | |
| John | Baker | | | 1 | | |

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| Naela | Barakat | | | 1 | | |
| Ernest | Barber | | | 1 | | |
| Thomas | Barksdale | | | 1 | | |
| Dennis | Barletta | Tina L. Barletta | | 1 | | |
| Cleatus | Barnett | | | | 1 | |
| Teresa | Barresi | | | 1 | | |
| Jim | Barrett | | | 1 | | |
| David | Barry | | | 1 | | |
| Luisa | Bell | | | 1 | | |
| Robert | Bell | | | 1 | | |
| Robert | Bender | Laurada K. Bender | | 1 | | |
| Jody | Bennett | E. Bruce Bennett | | 1 | | |
| Maria | Bensimon | Hector Bensimon | | 1 | | |
| Susan | Berger | | | 1 | | |
| Mary | Berry | | | 1 | | |
| Garth | Bhilar | | | 1 | | |
| Robert | Bishop | | | | 1 | |
| Jennifer | Blackwell | | | 1 | | |
| Elizabeth | Bles | | | | 1 | |
| Leonard | Block | | | 1 | | |
| Richard | Bochner | | | 1 | | |
| Edmund | Bowles | | | 1 | | |
| Francesca | Bravo | Antonio Bravo | | 1 | | |
| Kim | Brevell | | | 1 | | |
| Germaine | Broussard | | | 1 | | |
| Edith | Brown | Judith Brown | | 1 | | |
| Garnett | Brown | Theresa W. Brown | | 1 | | |
| Julianna | Brown | | | 1 | | |
| Ruth | Brown | | | 1 | | |
| Catherine | Bryan | | | 1 | | |
| Richard | Bryant | Bonnie L. Bryant, RS | | | 1 | |
| Carol | Burroughs | | | 1 | | |
| Roy Parrish | Byrd | | | 1 | | |
| John | Byrne | | | 1 | | |
| Donald | Cackler | Joyce Cackler | | 1 | | |
| Glenn | Cain | | | 1 | | |
| Velma | Cameron | | | 1 | | |
| Francis | Carlson | | | 1 | | |
| Soon Young | Carroll | | | 1 | | |
| Linda | Caruso | | | 1 | | |
| Michiko | Casey | | | 1 | | |
| Rebecca | Cate | Mike Cavin | | 1 | | |
| Warren | Clarke | | | 1 | | |
| Kathey | Cleal | | | 1 | | |
| W. Davis | Coale | | | 1 | | |
| John | Coffin | | | 1 | | |
| Karen | Connolly | | | 1 | | |

APPENDIX B: Supplemental Draft EIS Recipients

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| Shirley | Connolly | | | 1 | | |
| Barbara | Coplon | | | 1 | | |
| Elizabeth | Corish | | | 1 | | |
| Mike | Corrigan | | | 1 | | |
| Michael | Corry | Deborah Corry | | 1 | | |
| Frederick | Costello | | | 1 | | |
| Alice | Courtillet | | | 1 | | |
| Cami | Creason | | | 1 | | |
| Dorothy | Crissey | Eugene Crissey | | 1 | | |
| Bill | Crockett | | | | 1 | 1 |
| Manuel | Cunha | Carolyn H. Cunha | | 1 | | |
| M(illegible) | D(illegible) | | | 1 | | |
| Robert | Dagitz | Constance Dagitz | | 1 | | |
| Cecilia | Daniels | | | 1 | | |
| John | Deam | | | 1 | | |
| Luzana | Deveic | | | 1 | | |
| Karen | Diamond | | | 1 | | |
| Dennis | Dineen | | | 1 | | |
| Beth | Dublin | | | 1 | | |
| Donald | Dusenbury | Angela C. Dusenbury | | 1 | | |
| Mohtaram | Erfani | | | 1 | | |
| Harold | Erickson | Phyllis C. Erickson | | 1 | | |
| Marjorie | Eubank | | | 1 | | |
| Jean | Evans | | | 1 | | |
| Julian | Fernandez | Helen O. Fernandez, Tr. | | | 1 | |
| Kate | Fisher | | | 1 | | |
| John | Foust | | | 1 | | |
| G. Don | Fowler | Diane Hopkins | | 1 | | |
| Al | Francese | | | 1 | | |
| Dorothy | Freedman | c/o Mitchel Freedman | | 1 | | |
| Janet | Freudenberger | | | 1 | | |
| Elsa | Friedlander | | | 1 | | |
| Charles | Funderburg | | | 1 | | |
| Shirley | Gamache | | | 1 | | |
| Malin | Gebraili | | | 1 | | |
| Mahmoud | Ghannam | | | 1 | | |
| Kim | Gibson | Dale E. Gibson | | 1 | | |
| Ronald | Goldman | Roberta S. Goldman | | 1 | | |
| Jacqueline | Goodnight | | | 1 | | |
| Greg | Gorham | | | 1 | | |
| Julia | Goss | | | 1 | | |
| Greg | Griswold | | | 1 | | |
| Rosemary | Gustin | | | 1 | | |
| Herbert | Hackney | | | 1 | | |
| Walter | Hadlock | | | 1 | | |
| Steven | Hamberg | Nicole B. Yakatan | | 1 | | |
| Colleen | Hannas | | | 1 | | |

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| Martha | Harris | | | 1 | | |
| Carroll | Harvey | | | 1 | | |
| James | Hawkins | | | 1 | | |
| Peter | Heimsath | | | 1 | | |
| Dorothy | Hennick | | | 1 | | |
| Patrick | Henretty | | | 1 | | |
| A. | Hickerson | | | 1 | | |
| Arthur | Hill | | | 1 | | |
| Harry | Hilton | | | 1 | | |
| William | Holmes | | | 1 | | |
| Bea | Holway | | | 1 | | |
| Jewel | Holz | | | 1 | | |
| Mary | Howard | | | 1 | | |
| Geraldine | Huddle | | | 1 | | |
| Michelle | Humasiecki | | | 1 | | |
| Karen | Hunt | | | 1 | | |
| Nancy | Husch | | | 1 | | |
| C. | Hylton | | | 1 | | |
| Karl | Ingebritsen | | | 1 | | |
| Mark | Jafree | | | 1 | | |
| Frederick | Janney | Pamela J. Noe | | 1 | 1 | |
| Olivia | Jenney | Ralph K. Jenney | | | 1 | |
| Thomas | Johanneck | | | 1 | | |
| Bruce | Johnson | | | 1 | | |
| Louise | Jones | | | 1 | | |
| Stephen | Jones | Sandra E. Jones | | 1 | | |
| Rhonda | Jordan | | | 1 | | |
| Kathleen | Kadane | | | 1 | | |
| Joseph | Kalet | Margaret M. Kalet | | | 1 | |
| Peter | Kalish | | | 1 | | |
| Batoul | Kamkar-Parsi | | | 1 | | |
| Patrick | Kane | | | 1 | | |
| George | Kang | Yung J. Kang | | 1 | | |
| Paul | Kelly | Allison B. Kelly | | 1 | | |
| Yoshiko | Kendig | | | 1 | | |
| John | Kenney | | | 1 | | |
| Jinho | Kim | Jessica S. Kim | | 1 | | |
| Joan | Kindle | Jim Kindle | | 1 | | |
| Philipp | Klein | | | 1 | | |
| Hilda | Kreeger | | | 1 | | |
| Mahesh | Krishnan | Raehna S. Krishnan | | 1 | | |
| Andy | Kunz | | | 1 | | |
| M. | L(illegible) | | | 1 | | |
| Caroline | Laikin | | | 1 | | |
| Chuck | Lapinski | | | 1 | | |
| Jim | Larson | | | 1 | | |
| Paul | Leisz | | | 1 | | |

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| Antoinette | Lenard | | | 1 | | |
| Michael | Leslie | | | 1 | | |
| Sally | Liff | | | 1 | | |
| Lorinda | Lionberger | | | 1 | | |
| Henry | Long | | | | 1 | |
| Thomas | Luce | | Ellen M. Luce | 1 | | |
| Eric | Maier | | | 1 | | |
| Michael | Malak | | | 1 | | |
| Bonita | Mampe | | | 1 | | |
| Arthur | Manfredi | | | 1 | | |
| Howard | Marks | | | 1 | | |
| Jacques | Mathieu | | | 1 | | |
| Scott | May | | | 1 | | |
| Juanita | Mays | | | 1 | | |
| Mason | McAllister | | | 1 | | |
| Michael | McCormick | | | 1 | | |
| David | McCracken | | | 1 | | |
| Andrea | McGimsey | | | 1 | | |
| Patrick | McGrath | | Donna McGrath | 1 | | |
| Charles | McGuire | | | 1 | | |
| Mike | McGuire | | | 1 | | |
| Howard | Melton | | Catherine E. Rettie | 1 | | |
| Daniel | Michael | | Martha P. Michael | 1 | | |
| Kathleen | Millnick | | | 1 | | |
| Felice | Mills | | | 1 | | |
| Minerva | Mismas | | | 1 | | |
| Norma | Moles | | | 1 | | |
| Chang Whan | Moon | | Tae K. Park | 1 | | |
| Douglas | Morris | | | 1 | | |
| Michael | Morstein | | | 1 | | |
| Ahmad | Moshaveghzadeh | | Mahrokh Moshavegzadeh | 1 | | |
| Nan | Mueller | | | 1 | | |
| Elizabeth | Nagley | | | 1 | | |
| Judith | Naiman | | | 1 | | |
| Khadija | Nazeer | | John A. Nazeer | 1 | | |
| Ian | Nehrbakhski | | | 1 | | |
| Cynthia | Neu | | | 1 | | |
| Arlene | Newman | | | 1 | | |
| Hung | Nguyen | | Sesil O. Nguyen | 1 | | |
| John | Nicolais | | Susan G. Nicolais | 1 | | |
| Hipolito | Nino | | | 1 | | |
| Hassan | Nouri | | Jean A. Nouri | 1 | | |
| Ronald | Nowak | | Thu T. Nowak | 1 | | |
| Eric | Nusbaum | | | 1 | | |
| Thomas | O'Connor | | | 1 | | |
| Ed | Olechna | | Lydia Olechna | 1 | | |
| Nancy | Oler | | | 1 | | |

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| Ferne | Ostheim | Jerhim Ostheim | | 1 | | |
| Ronald | Ouellet | Michelle P. Ouellet | | | 1 | |
| Ann | Paduda | | | 1 | | |
| Sandra | Pagano | | | 1 | | |
| Mae Sparger | Paine | | | 1 | | |
| Mike | Panetta | | | 1 | | |
| Jeffrey | Parnes | | | 1 | | |
| Mahrokh Kamkar | Parsi | | | 1 | | |
| Hashemine | Parvin | | | 1 | | |
| Tabriz | Parvin | | | 1 | | |
| Richard | Peacock | | | 1 | | |
| Heath | Pemberton | | | 1 | | |
| Niels | Pemberton | | | 1 | | |
| Thomas | Pender | | | 1 | | |
| David | Pendleton | | | 1 | | |
| Robert | Phelps | Carol Phelps | | 1 | | |
| Jim | Policaro | | | 1 | | |
| Alexandria | Popa | | | 1 | | |
| Sanjiv | Prakash | Sharmila H. Prakash | | 1 | | |
| Syed | Quayum | | | 1 | | |
| Ezzatollah | Rassekh | Monavar Rassekh | | 1 | | |
| Francis | Rebhun | Carmen R. Sanclemente, Tr. | | 1 | | |
| Lillian | Reger | | | 1 | | |
| Lynn | Reid | | | 1 | | |
| Douglas | Reimel | | | 1 | | |
| William | Reinhart | | | 1 | | |
| Janice | Roberts | | | 1 | | |
| Richard | Robertson | | | | 1 | |
| R(illegible) | Rogan | | | 1 | | |
| William | Romano | | | 1 | | |
| John | Roop | | | 1 | | |
| Randy | Rosenfeld | | | 1 | | |
| Dan | Rosenthal | | | 1 | | |
| Pauline | Rubin | | | 1 | | |
| David | Rybak | Judith P. Rybak | | 1 | | |
| Anthony | Sabo | | | 1 | | |
| Farzin | Sadjadi | | | 1 | | |
| Nancy | Schindler | | | 1 | | |
| Wayne | Schmidt | | | 1 | | |
| Elizabeth | Seiler | | | 1 | | |
| Judy | Sherbe | | | 1 | | |
| Paul | Shirey | | | 1 | | |
| John | Shumadine | | | 1 | | |
| Arthur | Siegel | Vivian S. Siegel | | 1 | | |
| Helen | Silverman | Robert I. Silverman, Tr. | | 1 | | |
| Robert | Simon | | | 1 | | |
| Dina | Simone | | | 1 | | |

| First Name | Last Name | Title | Organization | SDEIS ES | SDEIS Vol 1 | SDEIS Vol 2 |
|---|---|---|---|---|---|---|
| Olga | Sivit | | | 1 | | |
| Otto | Sonefeld | | | 1 | | |
| Audrey | Speacht | | | 1 | | |
| Elizabeth | Stallings | | | 1 | | |
| Alice | Starr | | | 1 | | |
| Donald | Stephens | | | 1 | | |
| Stacie | Stetson | | | 1 | | |
| Richard | Stevens | | Norma J. Stevens | 1 | | |
| Paul | Stevenson | | | 1 | | |
| John | Stroik | | | 1 | | |
| Mark | Sublette | | | 1 | | |
| Mehdi | Tabrizi | | Parvindokhat Hasheminejad | 1 | | |
| Millicent | Taylor | | Simeon Taylor | 1 | | |
| Edson | Tennyson | | | 1 | | |
| Joshua | Tenuta | | | 1 | | |
| John | Thiumann | | | 1 | | |
| William | Thomson | | | 1 | | |
| Jeannette | Tillotson | | | 1 | | |
| Christeen | Tolle | | | 1 | | |
| Martin | Topper | | Margaret Topper | 1 | | |
| Kathleen | Trainor | | | 1 | | |
| Maureen | Tredway | | | 1 | | |
| Keith | Turner | | | 1 | | |
| Clay | Tyeryar | | Barbara B. Tyeryar | 1 | | |
| Clark | Tyler | | | 1 | 1 | |
| William | Tyrrell | | Jennifer G. Tyrrell | 1 | 1 | |
| Jay | Ulrich | | | 1 | | |
| James | Vecchiarelli | | | 1 | | |
| Carlos | Viera | | Judith L. Viera, Tr. | | 1 | |
| Isaiah | Von | | Bernice Von | 1 | | |
| John | Walker | | | 1 | | |
| Richard | Wallace | | Alice W. Wallace | 1 | | |
| John | Walsh | | | 1 | | |
| James | Wang | | | 1 | | |
| Warren | Weimer | | | 1 | | |
| Ulysses | White | | | | 1 | |
| Carr | Whitener | | | 1 | | |
| Doyle | Whittaker | | Juanita Whittaker | | 1 | |
| Ruth | Willis | | | 1 | | |
| Sean | Willson | | Nancy Willson | 1 | | |
| Daniel | Wyman | | Gloria J. Wyman | 1 | | |
| Daniel | Zugris | | | 1 | | |

## APPENDIX C: REFERENCES


Adkins, Christopher—Virginia Department of Health. 2001. Personal and email communication with consultant on April 16, 2001.

Alexandria Drafting Company. 2000. *Street Map Book, Northern Virginia.* Alexandria, Virginia.

Alexandria Drafting Company. 2001. *Street Map Book, Loudoun County, Virginia.* 23rd edition. Alexandria, Virginia.

Ammann & Whitney, Eero Saarinen, Burns & McDonnell, and Ellery Husted. 1964. *Dulles International Airport-Master Plan Report.* Submitted to the Federal Aviation Agency, Washington, D.C. Copy of original located in offices of Parsons Management Consultants, Dulles International Airport, Virginia.

Bailey, Joseph R., J. Harrison, B. Martof, M.W. Palmer. 1980. *Amphibians and Reptiles of the Carolinas and Virginia.* Chapel Hill, North Carolina: The University of North Carolina Press.

Barbour, Michael T., J Gerritsen, B.D. Snyder, J.B. Stribling. *Rapid Bioassessment Protocols For Use In Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertevrates, and Fish.* Report EPA 841-B-99-002. Washington, DC: Environmental Protection Agency.

Berlin, A.M., H. Heston and K. Barr. 1989. *Phase II Archaeology Study: Satellite Site (44LD423), Dulles International Airport.* Submitted to Metropolitan Washington Airports Authority. Prepared by Parsons Management Consultants, Fairfax, Virginia.

Birdsong, Murphy O., E. Murdy, J. Musick. 1997. *Fishes of Chesapeake Bay.* Washington, DC: Smithsonian Institution Press.

Broadlands.org.ca. 2000. *Welcome* (Internet website http://www.broadlands.org/hsiteplan2.html. Accessed April 2003).

Burkhead, Noel M., and R. Jenkins. 1994. *Freshwater Fishes of Virginia.* Bethesda, Maryland: American Fisheries Society.

Burt, William and R. Grossenheider. 1952. *Peterson Field Guide—Mammals.* Boston, Massachusetts: Houghton Mifflin Company.

Burton, Lucius W. Jr. "A New International Airport," *Traffic Quarterly* 16 (1962): 67-74. California Department of Transportation. 1978. *Energy and Transportation Systems.*

Capital Transit Consultants. 2001. *Preliminary Geotechnical Investigation Final Report.* Prepared by Law Engineering and Environmental Services, Inc.

Chesapeake Bay Local Assistance Board. 1990. *Chesapeake Bay Preservation Area Designation and Management Regulations—Virginia Administrative Code.* 9VAC10-20 et seq. (formerly VR173-02-01).

Chittenden, B., A. Heintzelman, and A. Landry. 1985. *Report of Findings: Survey Portion of the Fairfax County Subgrant Heritage Resources Management Plan.* Fairfax County, Virginia: Heritage Resources Branch, Office of Comprehensive Planning.

Commonwealth Transportation Board. 1992. *Dulles Corridor Plan.*

Conant, Roger and J. Collins. 1998. *Peterson Field Guide- Reptiles and Amphibians Eastern/Central North America.* New York: Houghton Mifflin Company.

Congress of the United States, Congressional Budget Office. 1977. *Urban Transportation and Energy: The Potential Savings of Different Modes.*

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States* (Report FWS/OBS-79/31). Washington, DC: United States Department of the Interior—Fish and Wildlife Service.

Curling, Sam, Virginia Department of Transportation. 2001. Telephone interview with consultant on January 30, 2001.

DartRAIL. 1989. *An Action Program for Comprehensive Transportation Improvements in the Tysons Corner/ Dulles Corridor Area.*

Daugherty, J.S. and M.D. Petraglia. 1989. *Phase 1 Archaeological Testing, Potomac Interceptor Extension, Loudoun County, Virginia.* Submitted to Ralph M. Parsons Company, Washington, D.C.. Prepared by Engineering-Science, Inc. Washington, D.C.

David, E.S. 1978. National Register of Historic Places Inventory – Nomination Form for Sunset Hills in Herndon, Virginia. Fairfax County Office of Comprehensive Planning, Fairfax, Virginia.

DeLorme. 2000. *Street Atlas USA* (Version 8.0).

*Development Baseline: Loudoun County Comprehensive Plan Revision, Supplemental Data Tables.* 2001. Presentation to the Loudoun County Planning Commission.

Donnelly-Shay, N. and G. Shay. 1988. *The County of Loudoun: An Illustrated History.* The Donning Company, Norfolk.

Dulles Corridor Land Use Task Force. 2001. *Dulles Corridor Land Use Task Force Report.*

Dulles Rapid Transit. 1991. *Norfolk District Regulatory Branch Wetland Mitigation Policy.*

Environmental Data Resources, Inc. 2000. Search of available environmental records: Project area Dulles Access Road.

Environmental Data Resources, Inc. 2000. Search of available environmental records: Project area I-66.

Environmental Data Resources, Inc. 2000. Search of available environmental records: Project area Tysons Corner.

Environmental Data Resources, Inc. 2000. Search of available environmental records: Project area east of I-495.

Environmental Data Resources, Inc. 2001. Search of available environmental records: Project area Dulles International Airport.

Environmental Data Resources, Inc. 2001. Search of available environmental records: Project area Route 28.

Environmental Quality Advisory Council. 2000. *Annual Report on the Environment, 2000.* Fairfax County, Virginia.

Executive Office of the President, Council on Environmental Quality. 1997. E*nvironmental Justice Guidance Under the National Environmental Policy Act.*

Fairfax County Board of Supervisors. 1995. Fairfax County Comprehensive Land Use Plan map.

Fairfax County Board of Supervisors. 1995. *Policy plan: The Countywide Policy Element of the Comprehensive Plan for Fairfax County.*

Fairfax County Board of Supervisors. 1995. *Fairfax County Comprehensive: Area II.* Fairfax, Virginia.

Fairfax County Board of Supervisors. 1995. *Fairfax County Comprehensive Plan: Area III.* Fairfax, Virginia.

Fairfax County Board of Supervisors. June 1995. *Fairfax County Comprehensive Plan: Area II.* Fairfax, Virginia.

Fairfax County Board of Supervisors. June 1995. *Fairfax County Comprehensive Plan: Area III.* Fairfax, Virginia.

Fairfax County Board of Supervisors. 2001. *Fairfax County Code of Ordinances: Chapter 118—Chesapeake Bay Preservation Ordinance.*

Fairfax County Department of Planning and Zoning. 2000. *Fairfax County Comprehensive Plan.* Fairfax, Virginia. Fairfax County Department of Public Works & Environmental Management—Environmental and Facilities Review Division. 2001. *Fairfax County Real Property Identification Maps Soils.*

Fairfax County Department of Public Works & Environmental Management—Environmental and Facilities Review Division. 2001. *Ratings of Soils for Urban Development in Fairfax County.*

Fairfax County Department of Public Works & Environmental Management. 2001. *Public Facilities Manual.*

Fairfax County Department of Public Works and Environmental Management—Stormwater Management Branch, Stormwater Planning Division. 2001. *Fairfax County Stream Protection Strategy Baseline Study.*

Fairfax County Department of Systems Management for Human Services Research, Analysis and Project Services. 2000. *2000 Rental Housing Complex Census Analysis.*

Fairfax County Department of Systems Management for Human Services. 1999. *Demographic Reports 1999: A Report of the Urban Development Information System.* Fairfax, Virginia.

Fairfax County Department of Tax Administration. 2001. General information. Available on Internet web site http://www.co.fairfax.va.us/dta/homepage.htm.

Fairfax County Economic Development Authority. 2001. *Fairfax County Real Estate Report – Year end 2000.*

Fairfax County Economic Development Authority. 2000. *Area Business Report: Reston–Herndon.*

Fairfax County Economic Development Authority. 2000. *Area Business Report: Tysons Corner.*

Fairfax County Fire and Rescue. 2001. General information. Internet web site http://www.co.fairfax.va.us/ps/fr/Homepage.htm.

Fairfax County Health Department. *1*998. *Stream Water Quality Report.*

Fairfax County Natural Resource Conservation Service. 2001. *Description of Fairfax County soils.*

Fairfax County Office of Transportation and Federal Transit Administration. 1995. *Reston East at Wiehle Avenue Park-and-Ride facility: Environmental Study.*

Fairfax County Park Authority [FCPA] ca. 1990. An Historical Sketch of Fairfax County. In *Fairfax County Virginia: An Historical Tour Map & Guide to Places of Interest.* FCPA and Fairfax County History Commission. Fairfax, Virginia.

1999. Outline of Major Trends: Fairfax County History 1607-1999. FCPA: Fairfax, Virginia.

Fairfax County Police Department. 2001. General information. Available on Internet web site http://www.co.fairfax.va.us/ps/police/Homepage.htm.

Fairfax County Public Schools. 2001. School guide. Available on Internet web site http://www.fcps.k12.va.us.

Fairfax County Water Authority annual report on water quality. Available on Internet web site http://www.FCWA.org/cgi-bin/section.p15/waterquality.

Fairfax County. 1996. *Household Survey Highlights Fairfax County.*

Fairfax County.1999. *Annual Report Fairfax County Citizen's Guide to the Comprehensive Plan Review Process 1997-1998.*

Fairfax County. 2000. Global Information Systems Data (electronic format).

Fairfax County. 2000. *Reston East Park-and Ride–Dulles Corridor Rapid Transit Project: Parking Demand Study.*

Fairfax County. 2000. *Fairfax County Comprehensive Plan*

Fairfax County. 2001. "Department of Tax Administration." Available on Internet web site http://www.co.fairfax.va.us/dta/homepage.htm.

Fairfax County. June 2002. *Countywide Trails Plan.*

Federal Emergency Management Agency. 1982. *Flood Insurance Rate Map of the City of Falls Church Virginia (Independent City)* (Community-Panel number 510054-0001-B).

Federal Emergency Management Agency. 1985. *Flood Insurance Rate Map of Loudoun County Virginia (Unincorporated Areas)* (Community-Panel number 510090-0001-0225).

Federal Emergency Management Agency. 1985. *Flood Insurance Rate Map of Loudoun County, Virginia (Unincorporated Areas)* (Community-Panel number 510090-0120-C).

Federal Emergency Management Agency. 1990. *Flood Insurance Rate Map of Fairfax County, Virginia (Unincorporated Areas)* (Community-Panel number 515525-0050-D).

Federal Emergency Management Agency. 1990. *Flood Insurance Rate Map of Fairfax County, Virginia (Unincorporated Areas)* (Community-Panel number 515525-0001-0150).

Federal Emergency Management Agency. 1990. *Flood Insurance Rate Map of Fairfax County, Virginia (Unincorporated Areas)* (Community-Panel number 515525-0025-D).

Federal Emergency Management Agency. 2000. *Flood Insurance Rate Map of Loudoun County, Virginia (Unincorporated and Incorporated Areas)* (Community-Panel number 5).

*Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks*, **Federal Register**, November 28, 1995.

Frankel, G. and P. Pae. 1997. In Loudoun, Two Worlds Collide. *Washington Post.* March, 24, 1997; page A01

Froelich, A.J. and William H. Langer. 1983. *Map Showing Geologic Provinces, Landforms, Drainage Basin Characteristics, and Flooding In Fairfax County and Vicinity, VA.* Map I-1421 at scale 1:48,000. United States Department of the Interior—United States Geological Survey.

Gailey, C.K. 2001. Personal communication with Fairfax County Archaeological Services volunteer on January 30, 2001.

Gannon, T.N. 1999. *A Phase I Cultural Resources Survey of Approximately 40 acres for the Silver Satellite Parking Lot, Dulles International Airport, Loudoun County, Virginia.* Submitted to the Metropolitan Washington Airports Authority. Prepared by Burns and McDonnell, Inc.

Gardner, W.M., K.A. Snyder, and G.J. Hurst. 2002. *A Phase 1 Archeological Investigation of a circa 42 Acre Property of Shellhorn Road, Loudoun County, Virginia.* Submitted to Comstock Homes, McLean, Virginia. Prepared by Thunderbird Archeological Associates, Inc., Woodstock, Virginia.

Gardner, William M., Kimberly A. Snyder, and Kimberly Weinberg. 1997. *Phase I Archeological Investigations at the 83 Acre Dulles Greens Property, Fairfax, Virginia.* Report prepared for Toll Brothers, Inc. by Thunderbird Archeological Associates, Inc., Woodstock, Virginia.

Goodman, E. 1987. *Archaeological Survey at Route 28, Sites 44FX845, 44FX848, 44FX856, 44FX860, and 44FX899, Fairfax County, Virginia.* Submitted to McGuire, Woods, Battle & Booth, McLean, Virginia. Prepared by Engineering-Science, Washington, D.C.

Greenhorne and O'Mara, Inc. ca. 1995. *Phase I Archaeological Investigations of the Proposed Snow Removal/Salt Storage Facility, Dulles International Airport, Loudoun County, Virginia.* Greenbelt, Maryland.

Greenhorne and O'Mara, Inc. 1996. *Phase 1 Archeological Investigation of the Proposed New Runway, Dulles International Airport, Loudoun County, Virginia.* Prepared for the Metropolitan Washington Airports Authority. Greenbelt, Maryland.

Hall, T.C. 1997. "Clutch Cargo: New Warehouse to Accommodate Growth at Dulles." *Washington Business Journal,* August 15, 1997.

1999. Greenway Finally Going Somewhere. *Washington Business Journal,* December 3, 1999.

2000. Future 'Greenways' will be Private-Public Ventures. *Washington Business Journal,* February 25, 2000.

Harris, T.D., and J.L. Friedman. 1998. *Supplemental Archaeological Investigations of the Charles Harris (44FX854) and Frank Harris (44FX852) Sites and an Associated Section of Old Ox Road (44FX892), Trevors Run Apartments (F/K/A Dulles Center Apartments), Fairfax County, Virginia.* Submitted to Rocks Engineering Company. Prepared by Dames and Moore Cultural Resource Services.

Harrison, Dianna, Senior Housing Services Specialist, Fairfax County Department of Housing. 2001. Personal communication with consultant on May 24, 2001.

Haynes, J. H., Jr. 1988. *Report on Cultural Resources Survey for the Proposed Dulles Toll Road Extension.* Report prepared for Byrd, Tallamy, MacDonald and Lewis, Falls Church, Virginia.

1989. *Report of Phase 1 Cultural Resources Survey for the U.S. Postal Service Dulles Facility, Loudoun County, Virginia.* Report prepared for The Evans Company, McLean, Virginia.

1990. *Dulles Toll Road Extension Phase II: Archaeological Investigation at Eleven Prehistoric and Six Historic Period Sites.* Volume I. Submitted to VDOT via Wilbur Smith Associates, Falls Church, Virginia. Prepared by WAPORA, Inc., McLean, Virginia.

1991. *Dulles Toll Road Extension Phase I Archaeological Survey Report: Toll Road Corporation of Virginia Alignment.* Submitted to The Toll Road Corporation of Virginia, Leesburg, Virginia. Prepared for WAPORA, Inc., McLean, Virginia.

Henry, S.L., B. Chittenden, E.S. David, M.F. Johnson, and M.R. Williams. 1988. *Fairfax County Heritage Resource Management Plan.* Heritage Resources Branch, Office of Comprehensive Planning, Fairfax County, Falls Church, Virginia.

*Herndon Times.* 1985. Laura Ratcliff Burial Site. November 30, 1985. Page A3.

Hilpert, M. 1999. Growth – fast or slow – predicted for Greenway. *Washington Business Journal*, December 10, 1999.

Hopkins, G.M. 1878. Providence District No. 5, Fairfax County, *G. M. Hopkins Atlas of Fifteen Miles Around Washington, D.C.*

Howell, Herbert H. "Washington International Airport-a model for the Jet Age." *Civil Engineering* 29 (1959): 42-45.

Hughes, L. H. and S. M. Moffett. 1999. National Register of Historic Places Registration Form for A. Smith Bowman Distillery in Reston, Virginia. E. H. T. Traceries Inc.: Chevy Chase, Maryland.

Jellick, Gary. *EPA Interim Regulations on Discharge of Dredged or Fill Material into Navigable Waters* (Report 40 CFR 230; 45 FR 85344). Bureau of National Affairs.

Johnson, M. F. 1978. *Prehistoric Site Survey of the Herndon Municipal Golf Course.* Prepared for the Fairfax County History Commission. Northern Virginia Chapter, Archaeological Society of Virginia. Occasional Paper 79-1.

1983. *The Upper Cub Run Complex, Part I: Site 44FX143, A Research Report.* Fairfax County Archaeological Survey, Office of Comprehensive Planning, Fairfax, Virginia.

*The Prehistory of Fairfax County: An Overview.* (Selections from the Fairfax County Heritage Resource Management Plan by Henry et al. 1986). Heritage Resources Branch, Office of Comprehensive Planning, Fairfax County: Falls Church, Virginia.

Letter to Mark R. Kukoski, Project Manager, Charles E. Smith Construction, Inc. from Michael Johnson, County Archaeologist, Fairfax County, Virginia, on July 29, 1988.

1996. *American Indian Life in Fairfax County 10,000 B.C. to A.D. 1650.* Heritage Resources Branch, Office of Comprehensive Planning, Fairfax County: Falls Church, Virginia.

Johnson, M. F. and D. P. Platte. 1988. *The Upper Cub Run Complex, Part II: Lithic Analysis of the First and Second Controlled Surface Collections from the Platte Site (44FX55).* Heritage Resources Branch, Office of Comprehensive Planning, Falls Church, Virginia.

Kao, T. ca. 1990. Walking Tour of the Grounds of the DeMoss House With an Extended Tour of What Remains of the Old Town of Wiehle. Prison Fellowship Ministries, Reston, Virginia.

Kassner, N. J. and B. R. Fischler. 1993. Phase II Archaeological Evaluation of the Proposed Expansion of the Satellite Parking Green Lot, Dulles International Airport, Loudoun County, Virginia. Prepared by Greenhorne and O'Mara, Inc., Greenbelt, Maryland.

KM Chng Environmental, Inc. 2001. *Final Noise and Vibration Measurement Protocol: Dulles Corridor Rapid Transit Project.* Burlington, Massachusetts.

KM Chng Environmental, Inc. 2001. *Dulles Corridor Rapid Transit Project, Noise and Vibration Technical Report.* Burlington, MA.

*Land and Water Conservation Fund Act (Section 6(f)).* Title 16 United States Code Section 460l-4 to 11 (Title 16, United States Code Chapter 1, Subchapter LXIX, Part B).

Lasernet, LLC. 1998. *Reston—A New Town with a History.* (Internet web site <http:// www.restontown.com/history.html> accessed January 2001).

Lerner Enterprises. 2001. General information. Available on Internet web site http://www.lernerenterprises.com.

Loth, C., editor. 1999. *The Virginia Landmarks Register.* 4th edition. Department of Historic Resources, Richmond, Virginia

Loudoun County Board of Supervisors. 2001. *Loudoun County Revised General Plan and Countywide Transportation Plan.*

Loudoun County Fire and Rescue Operations 2001. General information. Available on Internet web site http://www.loudoun-net.com/community/fireresc.htm.

Loudoun County Office of Mapping & Geographic Information. 2001. *Digital Data of Loudoun County* (Volume 2, Number 1).

Loudoun County Office of Mapping and Geographic Information. 1999. *Digital Data of Loudoun County* (Volume 1, Number 1).

Loudoun County. 1999. *Loudoun County Annual Growth Summary 1999.*

Loudoun County. 2001. "Summary of Taxes in Loudoun County." Available on Internet web site http:// www.co.loudoun.va.us/government/taxes.htm.

Loudoun County. 1995. *Countywide Transportation Plan.*

Loudoun County. 2000. *Global Information Systems Data* (electronic format).

Loudoun County. 2000. *Loudoun County Comprehensive Plan—Natural and Heritage Resources* (PC Draft).

Loudoun County. 2001. "Department of Taxes." Available on Internet web site http://www.co.loudoun.va.us/government/taxes.htm.

MacMillan, Frederick N., United States Environmental Protection Agency, Region III. Personal and email communication with consultant on May 22, 2001.

McCray, P. 2001. "Washington and Old Dominion Railroad 1847 to 1968: A Photographic History." Available on Internet web site http://geocities.com/pem20165.

McDowell, Irvin. 1862. *Map of Northeastern Virginia and Vicinity of Washington, Sheet 1, Surveys for Military Defenses.* Compiled in Topographical Engineers Office at Division Headquarters of General Irvin McDowell, Arlington, Virginia, January 1, 1862. Corrected August 1, 1862.

McLean. 2000. *McLean* (Internet web site <http:// www.mclean.va.us> accessed January 2001).

McQuade, Walter. "The Birth of An Airport," *Fortune* 65 (1962): 93-97, 130, 134, 136.

Metropolitan Washington Airports Authority. 1990. *Main Terminal Expansion, Washington Dulles International Airport, Concept Design.* Prepared by Skidmore, Owings & Merrill.

Metropolitan Washington Council of Governments, Department of Environmental Programs. May 1997. *Rapid Stream Assessment Technique Survey of the Sugarland Run Watershed, Phase I:* Sugarland Run Mainstem, Fairfax and Loudoun Counties, Virginia.

Metropolitan Washington Council of Governments, Department of Environmental Programs. May 1999. *Rapid Stream Assessment Technique Survey of the Sugarland Run Watershed,* Phase *II:* Sugarland Run Mainstem, Fairfax and Loudoun Counties, Virginia.

Metropolitan Washington Council of Governments - National Capital Region Transportation Planning Board. 2000. *Transportation Improvement Program for the Washington Metropolitan Region FY 2001-2006.*

Metropolitan Washington Council of Governments . 1996. *Composite Land Use Map* (electronic format).

Metropolitan Washington Council of Governments. 2000. *Growth Trends to 2025: Cooperative Forecasting in the Washington Region.*

Metropolitan Washington Council of Governments. 2000. *Round 6.2 Forecasts.*

Metropolitan Washington Council of Governments. 2000. *State Implementation Plan Revision (SIP), Phase II Attainment Plan for the Washington DC-MD-VA Nonattainment Area.*

Metropolitan Washington Council of Governments. 2001. *Washington Area Housing Partnership Annual Regional Housing Report.*

Mitchell, H. B. 1989. Letter from Deputy State Historic Preservation Officer, Virginia Department of Historic Resources, Richmond, to Francis J. Conlon, Metropolitan Washington Airports Authority, Washington, D.C. Dated December 8, 1989.

Mitchell, H. B. 1993. Letter from Deputy State Historic Preservation Officer, Virginia Department of Historic Resources, Richmond, to Frank D. Holly, Jr., Metropolitan Washington Airports Authority, Washington, D.C. Dated April 27, 1993.

Moorefield Station. 2001. General information. Available on Internet web site http://www.moorefieldstation.com.

National Capital Region Transportation Planning Board. 2000. *Financially Constrained Long Range Plan.*

National Capital Regional Transportation Planning Board. 1998. *1997 Update to the Financially Constrained Long-Range Transportation Plan for the National Capital Region.*

National Park Service. *National Register of Historic Places, Index by State and County.* (Internet web site <http://www.nr.nps.gov/iwisapi/explorer.dll> accessed December 2000 and March 2001).

*National Primary and Secondary Air Quality Standards* (40 CFR 50).

National Research Council—Transportation Research Board. 1997. *Wheel/rail Noise Control Manual* (Report 23). Washington, DC: Transit Cooperative Research Program.

Netherton, N., D. Sweig, J. Artemel, P. Hickin, and P. Reed. 1992. *Fairfax County: A History.* First printed 1978. Fairfax County Board of Supervisors, Fairfax, Virginia.

"A New Airport for Jets." *Architectural Record* 127 (1960): 175-182.

Northern Virginia Regional Park Authority. 1993. *Northern Virginia Regional Park Authority Guideline for the Development of W&OD Trail Bridge Crossings.* Centreville, Virginia.

Northern Virginia Transportation Coordinating Council. 1999. *Northern Virginia 2020 Transportation Plan.*

Otter, E., A. M. Berlin, and K. Barr. 1989. *Phase II Archaeological Testing at Site 44FX1569, A Quartz Quarry, Parcel 917, Reston, Virginia.* Engineering Science, Inc., Fairfax, Virginia.

Parsons Management Consultants. 1989. Historic and Archaeological Survey Report, Volume I and II, Washington Dulles International Airport, Loudoun and Fairfax Counties Virginia. Submitted to Metropolitan Washington Airports Authority, Washington, D.C.

Patton, Robin—Regional Community Development Coordinator, Fairfax County Department of Systems Management for Human Services. 2001. Personal communication with consultant on May 24, 2001.

Petraglia, M. D., and J. Bedell. 1994. *Phase I Survey of the Broadlands Development, Loudoun County, Virginia.* Prepared by Engineering Science, Inc., Fairfax, Virginia.

Poland, C. P., Jr. 1976. *From Frontier to Suburbia.* Walsworth Publishing Company, Marceline, Missouri.

Polglase, C. R. and M. T. Moran. 1989. *Phase II Archaeological Survey Adjacent to the Lewinsville House, Lewinsville Park, Fairfax County, Virginia.* Prepared for the Fairfax County Park Authority, Division of Historic Preservation, Fairfax, Virginia. Prepared by Goodwin & Associates, Inc., Frederick, Maryland.

Porter, H. C. et al. 1960. *Soil Survey of Loudoun County, Virginia.* Series 1951 No. 8. Issued September 1960. U.S. Department of Agriculture, Washington, D.C.

Pousson, J. F. ca. 1979. *An Assessment of Archaeological Resources, Wolf Trap Farm Park, Fairfax Co., Virginia.* National Park Service, Denver, Colorado.

*Report on Phase I Cultural Resources Survey for the U.S. Postal Service Dulles Facility, Loudoun County, Virginia.* 1989. Report prepared for The Evans Company, McLean, Virginia.

Reston Association. 2001. General information. Available on Internet web site http://www.reston.org.

Roderick, A. ca. 1962. 'Ryan' Once Had 15-Man Town Band: Village Once Was Called Five Points. In notebook of newspaper clippings: "Loudoun County Towns and Villages, IV, H to S;" page 96. In Thomas Balch Library, Leesburg, Virginia.

Rule, P. and J. Evans. 1983a. Phase I Archaeological Survey of the Proposed Remote Parking Facility, Dulles International Airport, Loudoun County, Virginia. Potomac River Archeology Survey, The American University, Washington, D.C.

1983b. Phase II Archaeological Investigations at 44LD298, 44LD299, and 44LD300, Dulles International Airport, Loudoun County, Virginia. Potomac River Archeology Survey, The American University, Washington, D.C.

Saarinen, Aline B. *Eero Saarinen on His Work.* New Haven and London: Yale University Press, 1962.

Saunders, Arven H. "Operational Experience at Dulles Airport." *Journal of the Aero-Space Transport Division* 90 AT2 (1964): 53-58.

Scheel, E. M. n.d.#95. "Five Forks" Grew from Plantation. *Loudoun Times-Mirror.* In notebook of newspaper clippings: "Newspaper Articles by Eugene Scheel: Towns of Loudoun County, Virginia, N to Z;" article No. 95, undated. In Thomas Balch Library, Leesburg, Virginia.

Scheel, E. M. n.d.#123. Before Dulles Airport Came Willard, of Course. *Loudoun Times-Mirror.* In notebook of newspaper clippings: "Newspaper Articles by Eugene Scheel: Towns of Loudoun County, Virginia, N to Z" article No. 123, undated. In Thomas Balch Library, Leesburg, Virginia.

Schug, R. F. 1973. *The Town of Herndon.* Unpublished paper. George Mason University, Fairfax, Virginia.

*Section 4(f) of the Department of Transportation Act.* Title 23 United States Code Section 138; Title 49 United States Code 303.

Simmons, S. E. and N. J. Kassner. 1991. *A Phase I Archaeological Survey of the Proposed Rent-A-Car Facilities at Dulles International Airport.* Greenhorne and O'Mara, Inc., Greenbelt, Maryland.

Simonovski, Amy. 2000. Washington Dulles Airport approves second expansion at $3.4 billion. *Architectural Record News*, August 8, 2000.

Sipress, A. 2000. Dulles to Undergo Major Expansion: Plan Includes Subway, More Parking. *Washington Post*, July 20, 2000, Page A1.

Skidmore, Owings & Merrill. 1990. *Main Terminal Expansion, Washington Dulles International Airport, Concept Design.* Prepared for Metropolitan Washington Airports Authority.

Snyder, Jim, United States Department of Agriculture. 2001. Personal and email communication with consultant on April 17, 2001.

*Sole Source Aquifer Designation of Poolesville Area Aquifer System, Lower Western Montgomery County, MD* (FRL-5952-3. Volume 63, No. 25). 1998.

Stefanoff, Genya, Planner II, Fairfax County Department of Planning Zoning. 2001. Personal communication with consultant on May 9, 2001.

Stuart, L. 1990. GRACE Scraps Bowman Warehouse Plans. *The Connection* newspaper, July 11, 1990, p. 3 and 8.

Talaga, D., J. Palen, M. Hatano, and E.C. Shirley. 1983. *Energy and Transportation Systems.* California Department of Transportation—Transportation Laboratory.

Taylor, Yardley. 1853. *Map of Loudoun County Virginia from Actual Surveys by Yardley Taylor.* Thomas Reynolds & Robert Pearsall Smith, publishers, Philadelphia.

Thomas, Bryant H. 2001. Email communication with consultant on February 15, 2001.

Tishman Speyer Properties. 2001. General information. Available on Internet web site http://www.tishmanspeyer. com.

Toulmin, C. and H. Heston. 1990. *Phase I Archaeological Investigations at the United Airlines Hangar Site, Washington Dulles International Airport.* Submitted to Parsons Management Consultants. Prepared by Engineering-Science, Inc., Washington, D.C.

Town of Herndon Department of Community Development. 1990. *Town of Herndon 2010 Comprehensive Plan.*

Town of Herndon. 2000. *Herndon/Monroe Station Northside Access Study, Traffic Technical Memorandum.*

Town of Herndon. 2001. *Herndon-Monroe Station Northside Access Study.*

Town of Herndon. 2001. General information. Available on Internet web site http:// www.town.herndon.va.us.

Trapp, Henry, Jr. and Marilee A. Horn. 1977. *Groundwater Atlas of the United States: Segment 11—Delaware, Maryland, New Jersey, North Carolina, Pennsylvania, Virginia, West Virginia.* United States Geological Survey.

Trombly, J., S. Kupferman, and D. Boyle. 1981. *Energy Impacts of Transportation Systems Management Actions.* New York State Department of Transportation, Transportation Data and Analysis Section Planning Division.

United States Army Corps of Engineers —Norfolk District Regulatory Branch. 1991. *Wetland Mitigation Policy.*

United States Bureau of Labor Statistics. 2001. *Local Area Unemployment Statistics for Washington, DC-MD-VA-WV PMSA.* Available on the Internet web site http://www.census.gov.

United States Census Bureau. 2001. "1990 Census Lookup." Available on Internet web site http://venus. census.gov/cdrom/lookup.

United States Census Bureau. 2001. "American FactFinder." Available on Internet web site http://factfinder.census.gov/servlet /BasicFactsServlet.

United States Department of Agriculture in Cooperation with the Virginia Agricultural Experiment Station and Fairfax County Virginia. 1963. *Soil Survey of Fairfax County, VA* (Series 1955).

United States Department of Agriculture. 1957 and 1962. Aerial photography of the project corridor. Salt Lake City, Utah: USDA Field Office.

United States Department of Commerce, Bureau of Economic Analysis. 2001. *Regional Input-Output Modeling System (RIMS II) Regional Multipliers for Fairfax County, Loudoun County, and the Commonwealth of Virginia.*

United States Department of Housing and Urban Development. 1979. *Flood Insurance Rate Map of the Town of Herndon, Virginia, Fairfax County.* Community Panel number 510052 0001 B.

United States Department of the Army. 1990. *Section 404 Mitigation Memorandum of Agreement.*

United States Department of the Interior—United States Geological Service. 1955, 1966, 1971, 1979, 1984, and 1994. *Topographic Maps, Fairfax, Virginia Quadrangles* (7.5 minute series).

United States Department of the Interior—United States Geological Service. 1956, 1965, 1971, 1979, 1984, 1988, and 1994. *Topographic Maps, Annandale, Virginia Quadrangles* (7.5 minute series).

United States Department of the Interior—United States Geological Service. 1956, 1966, 1971, 1979, 1983 and 1994. *Topographic Maps, Herndon, Virginia Quadrangles* (7.5 minute series).

United States Department of the Interior—United States Geological Service. 1965, 1971, 1979, 1984, and 1994. *Topographic Maps, Falls Church, Virginia Quadrangles* (7.5 minute series).

United States Department of the Interior—United States Geological Service. 1966, 1971, 1973, 1980, 1982, and 1994. *Topographic Maps, Vienna, Virginia Quadrangles* (7.5 minute series).

United States Department of the Interior—United States Geological Service. 1994. *Topographic Maps, Sterling, Virginia Quadrangles* (7.5 minute series).

United States Department of Transportation. 2001. "Environmental Justice." Available on Internet web site http://www.fhwa.dot.gov/environment/ej2.htm.

United States Department of Transportation—Departmental Office on Civil Rights and Office of the Assistant Secretary for Transportation Policy. 1997. United States Department of Transportation Order on Environmental Justice. *Federal Register.* Available on Internet web site http://wais. access.gpo.gov.

United States Department of Transportation—Federal Highway Administration. 1982. *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (23 CFR 772).

United States Department of Transportation—Federal Transit Administration. 1995. *Transit Noise and Vibration Impact Assessment – Final Report* (DOT-T-95-16).

United States Department of Transportation—Federal Aviation Administration and Metropolitan Washington Airports Authority. 1985. *Master Plan Update, Washington Dulles International Airport.*

United States Department of Transportation—Federal Aviation Administration. 1985. *Summary Report Master Plan Update Washington Dulles International Airport.*

United States Department of Transportation—Federal Aviation Agency. 1964. *Dulles International Airport Master Plan Report, Final Technical Report.*

United States Department of Transportation—Federal Highway Administration. 1989. *Section 4(f) Policy Paper.*

United States Department of Transportation—Federal Highway Administration. 2000. *FHWA Traffic Noise Model - Final Report* (Version 1.1). FHWA-PD-96-010.

United States Department of Transportation—Federal Transit Administration and Fairfax County Department of Transportation. 1995. *Reston East at Wiehle Avenue Park-and-Ride Facility: Environmental Study.*

United States Department of Transportation—Federal Transit Administration, Virginia Department of Rail and Public Transportation, and Washington Metropolitan Area Transit Authority. 2000. *Dulles Corridor Rapid Transit Project Scoping Process Report.*

United States Department of Transportation—Urban Mass Transit Administration. 1985. *Dulles Corridor Rapid Transit Development Feasibility Report.*

United States Environmental Protection Agency and Department of the Army. 1990. *Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines.*

United States Environmental Protection Agency, Office of Mobile Sources. 1993. *MOBILE5 Information Sheet #2: Estimating Idle Emission Factors Using MOBILE5.* Ann Arbor, Michigan.

United States Environmental Protection Agency, Office of Mobile Sources. 1998. *MOBILE5 Information Sheet #6: Effect of the New National Low Emission Vehicle Standard for Light-Duty Gasoline Fueled Vehicles.* EPA420-F-98-027. Ann Arbor, Michigan.

United States Environmental Protection Agency. 1993. *User's Guide to CAL3QHC Version 2: A Modeling Methodology for Predicting Pollutant Concentration Near Roadway Intersections.* EPA-454/R-92-006. Research Triangle Park, NC.

United States Environmental Protection Agency. 1997. *Control of Emissions of Air Pollution From Highway Heavy-Duty Engines; Final Rule.* 40 CFR Parts 9 and 86, 62 FR 203, page 54694.

Unites States Environmental Protection Agency. 2001. "Prime Farmland, Agriculture, and Soil Conservation." Available on Internet web site http://www.epa.gov/region03/greenkit/natural.htm# farmland.

United States Environmental Protection Agency. 2001. "Surf Your Watershed." Available on Internet web site http://www.epa.gov/surf/watershed.html.

United States Environmental Protection Agency—Office of Air Quality Planning and Standards. 1992. *Guideline for Modeling Carbon Monoxide From Roadway Intersections* (EPA-454/R-92-005). Research Triangle Park, NC.

United States Environmental Protection Agency—Office of Air Quality and Radiation, Office of Mobile Sources. 1994. *User's Guide to MOBILE5A (Mobile Source Emissions Factor Model)* (Revised as *MOBILE5b.* 1996.) EPA-AA-AQAB-94-01. Ann Arbor, Michigan.

United States Environmental Protection Agency—Office of Federal Activities. 1988. *Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis.*

United States Environmental Protection Agency. 1989. *Section 404(b)(1) Guidelines Mitigation MOA "Questions and Answers."*

*Virginia Ambient Air Quality Standards.* 9 VAC 5, Chapter 30.

Virginia Department of Conservation & Recreation—Division of Natural Heritage. 2001. *The Natural Communities of Virginia—Classification of Ecological Community Groups.* Natural Heritage Technical Report 01-1.

Virginia Department of Environmental Quality and Virginia Department of Conservation & Recreation. 1998. *303(D) Total Maximum Daily Load Priority List and Report.*

Virginia Department of Environmental Quality. 2001. *Monitor Values Report.* Available on Internet web site http://www.epa.gov/airweb.

Virginia Department of Environmental Quality. 2001. *Virginia Water Protection Permit Regulation.* 9VAC25-210 ET SEQ.

Virginia Department of Environmental Quality. 1998. *Virginia Water Quality Assessment (305(b) Report).*

Virginia Department of Mines, Minerals, and Energy—Division of Mineral Resources. General information. 2001. Available on Internet web site http://www.mme.state.va.us/dmr/DOCS/ geol/pied.html.

Virginia Department of Natural Resources. 1986. *Interpretive Guide to the Use of Soils Maps—Loudoun County Virginia.*

Virginia Department of Rail and Public Transportation. 1999. *I-66 Corridor Major Investment Study Summary Report of Findings and Recommendations.* Prepared by BRW, Inc.

Virginia Department of Rail and Public Transportation. 1997. *Dulles Corridor Transportation Study, Final Report.* Prepared by Parsons Brinkerhoff Quade & Douglass, Inc.

Virginia Department of Rail and Public Transportation. 1999. *Supplement to the Dulles Corridor Transportation Study: A Phased Implementation Program.* Prepared by Parsons Brinkerhoff Quade & Douglass, Inc.

Virginia Department of Rail and Public Transportation. 2001. *Capital Beltway Corridor Rail Feasibility Study, Final Report.*

Virginia Department of Rail and Public Transportation and Washington Metropolitan Area Transit Authority. 2000. *Dulles Corridor Rapid Transit Project New Starts Report Update FY 2002.*

Virginia Department of Rail and Public Transportation and Washington Metropolitan Area Transit Authority. 2001. *Final Alternatives Analysis Report.*

Virginia Department of Transportation. 1990. *Dulles Toll Road Extension Phase II: Archaeological Investigation at Eleven Prehistoric and Six Historic Period Sites.* Report prepared by WAPORA, Inc. via Wilbur Smith Associates.

Virginia Department of Transportation. 1993. *Phase II report: Western Regional Park-and-Ride Study.* Report DT00-96A-102, PE-101.

Virginia Department of Transportation. 1998. *Dulles Toll Road HOV Lane Implementation Study.* Prepared by Science Applications International Corporation.

Virginia Department of Transportation. 2003. *Virginia Transportation Six-Year Improvement Program, Fiscal Years 2004-2009.* Available on Internet web site: http://syip.virginiadot.org/.

Virginia State Water Control Board. 1997. *Water Quality Standards (Statutory Authority: 62.1-44.15(3a) of the Code of Virginia).* 9VAC 25-260-5 et seq.

Wagner, Mark. 2001. Personal communication with NRHP Manager at the Virginia Department of Historic Resources, Richmond. Telephone call with Elizabeth O'Brien, Parsons Engineering Science, Inc. November 5, 2001.

Ward, Henry H. 1995. "Historic Development of the Metropolitan Washington Airports: A Framework for Preservation." In *Preserving the Recent Past.* Washington, D.C.: Historic Preservation Education Foundation, 1995.

Washington Metropolitan Area Transit Authority. 2001. Proposed: *Washington Metropolitan Area Transit Authority Noise and Vibration Design Criteria.*

Washington Metropolitan Area Transit Authority. Wetlands Mitigation Options Report. July 2003.

Webster W., F. Parnell, and W. Biggs. 1985. *Mammals of the Carolinas, Virginia, and Maryland.* Chapel Hill: The University of North Carolina Press.

West*Group. 2001. General information. Available in Internet web site http://www.west-group.com.

Whitley, C. A. and D. E. Halsall. 1997. *Archaeological Overview and Assessment, Rock Hill Road Tract, Fairfax County, Virginia.* Submitted to Elm Street Development, Inc., McLean, Virginia. Prepared by Parsons Engineering Science, Inc., Fairfax, Virginia.

Wood, Heather. 2001. Email communication with consultant on March 27, 2001.

Zenone, Chester and J.D. Larson. 1983. *Groundwater Resources of Fairfax County and Vicinity, VA, and Some Aspects of Their Development.* (Map I-1473 at scale 1:48,000). United States Geological Survey.

# APPENDIX D-1: PUBLIC AND AGENCY COORDINATION MEETINGS

**Table D.1-1: Public and Agency Coordination Meetings**

| Date | Agency/Organization/Affiliation |
|---|---|
| June 25, 2002 | Citizens Advisory Committee, National Capital Region Transportation Planning Board |
| June 26, 2002 | Capital One |
| June 28, 2002 | Combined Chambers of Commerce (Fairfax County, Greater Reston, Greater McLean, Herndon-Dulles and Vienna-Tysons) |
| July 3, 2002 | Rusty Blues |
| July 9, 2002 | Toll Road Investors Partnership II (TRIP II) |
| July 9, 2002 | Providence District Homeowner Associations, Supervisor Connelly |
| July 10, 2002 | Fairfax County Park Authority Board |
| July 10, 2002 | Northern Virginia Regional Park Authority |
| July 11, 2002 | Dulles Corridor Rail Association Seminar |
| July 15, 2002 | Fairfax County Supervisor Gerald Connelly |
| July 16, 2002 | Fairfax County Supervisor Catherine Hudgins' Draft EIS Task Force |
| July 17, 2002 | National Association of Industrial and Office Properties |
| July 18, 2002 | Art Walsh and Elizabeth Baker of Walsh, Colucci, Stackhouse, Emrich, & Lubeley, P.C. |
| July 23, 2002 | Fairfax County Supervisor Catherine Hudgins' Draft EIS Task Force |
| July 23, 2002 | Host Marriott |
| July 24, 2002 | Hunter Mill District |
| July 26, 2002 | Rapid Transit Action Committee |
| August 5, 2002 | Fairfax County Board of Supervisors |
| August 8, 2002 | Tysons Corner Center, Wilmorite Properties, Inc. |
| August 13, 2002 | Boston Properties |
| August 14, 2002 | Supervisor Stuart Mendelsohn, Dranesville District Civic Associations |
| August 16, 2002 | Centennial Contractors Enterprises |
| August 21, 2002 | Greenwich Street Residents |
| August 23, 2002 | JM Zell Partners, LTD. |
| September 6, 2002 | City of Falls Church |
| September 9, 2002 | Dulles Corridor Steering Committee |
| September 12, 2002 | Dr. Tyrrell (property owner) |
| September 18, 2002 | Virginia Chapter of the American Planning Association |

| Date | Agency/Organization/Affiliation |
|---|---|
| September 20, 2002 | Gannett Company |
| September 27, 2002 | Boston Properties, Inc. |
| October 9, 2002 | Technical Working Group |
| October 10, 2002 | Federal Aviation Administration (FAA) |
| October 15, 2002 | Signature Flight Support |
| October 15, 2002 | Washington Airports Task Force |
| October 17, 2002 | Host Marriott |
| October 18, 2002 | Fairfax County Board's Transportation Committee |
| October 21, 2002 | Robert Marsteller and Merchant's Tire |
| October 23, 2002 | Carr Realty LP |
| October 24, 2002 | Pike 7 Center (Federal Realty Investment Trust) Holly Haley |
| October 25, 2002 | Boston Properties (Reston Overlook Project) |
| October 28, 2002 | Fairfax County Board of Supervisors |
| November 15, 2002 | Elizabeth Bles/Ray Updike 1980 Chain Bridge Road |
| November 18, 2002 | Fairfax County Economic Development Authority |
| November 19, 2002 | Fairfax County Department of Transportation & Tysons II (Lerner) |
| November 19, 2002 | Supervisor Connolly & Tysons Corner Center (Wilmorite) |
| November 20, 2002 | Commonwealth Transportation Board Workshop |
| November 21, 2003 | WMATA Board Meeting |
| November 21, 2002 | Clark Tyler and consultant, Hallcrest Heights Associates, Inc. |
| December 4, 2002 | Commonwealth Transportation Board Member Hobie Mitchell |
| December 11, 2002 | Tysons Corner Center (Wilmorite) |
| December 19, 2002 | Commonwealth Transportation Board (CTB) |
| February 10, 2003 | Dulles Corridor Rapid Transit Project Technical Working Group |
| February 11, 2003 | Town of Herndon and Stephen F. Owen, Town Manager |
| February 13, 2003 | Dulles Corridor Steering Committee |
| February 14, 2003 | US Army Corps of Engineers, Virginia Department of Environmental Quality, and US Environmental Protection Agency |
| February 27, 2003 | Virginia Department of Historic Resources (VDHR) |
| March 1, 2003 | Community Associations along Dulles Connector Road |
| March 4, 2003 | Wilmorite and Lerner Enterprises |
| March 11, 2003 | Metropolitan Washington Airports Authority (MWAA), Transportation Security Administration (TSA), Metropolitan Transit Police Department (MTPD) |
| March 19, 2003 | Professor John Collura's Public Transportation Class |

| Date | Agency/Organization/Affiliation |
|---|---|
| April 24, 2003 | Scott McHugh (TSA), MWAA, MTPD |
| May 21, 2003 | Loudoun County Department of Transportation |
| May 22, 2003 | Fairfax County Department of Transportation |
| May 28, 2003 | Virginia Department of Transportation (VDOT) |
| June 3, 2003 | Loundoun County |
| June 6, 2003 | Fairfax County Department of Transportation |
| June 10, 2003 | Lerner Enterprises |
| June 11, 2003 | Construction Specifications Institute (CSI) |
| June17, 2003 | Polo Fields Community |
| June 23, 2003 | Supervisor Connolly |
| Late June | West * Group |
| July 17, 2003 | Dulles Corridor Steering Committee |
| July 17, 2003 | WMATA Board of Directors |
| August 5, 2003 | VDOT |
| August 8, 2003 | Fairfax County |
| August 13, 2003 | Cooley Godward LLP, Ourisman Automotive, and Fairfax County staff |
| August 13, 2003 | Fairfax County Non-Motorized Transportation Committee |
| August 18, 2003 | Northern Virginia Transportation Summit |
| August 27, 2003 | Tysons Corner Center (Wilmorite) |
| September 9, 2003 | VDOT |
| September 18, 2003 | WMATA Board of Directors |
| September 25, 2003 | Dulles Corridor Technical Working Group |

## APPENDIX D - 2: AGENCY CORRESPONDENCE

Correspondence is organized by agency as follows, and chronologically.

### FEDERAL

Advisory Council on Historic Preservation (ACHP)

U.S. Department of Transportation, Federal Aviation Administration

### REGIONAL

Northern Virginia Regional Park Authority

### STATE

Virginia Department of Conservation and Recreation (VDCR)

Virginia Department of Historic Resources

### LOCAL

Loudoun County

DMC

August 8, 2003

Mr. Karl Rohrer, AICP
Project Manager
Dulles Corridor Rapid Transit Project
1550 Wilson Boulevard, Suite 300
Arlington, VA 22209

REF: Proposed Dulles Corridor Rapid Transit Project
Fairfax and Loudoun Counties, Virginia

Dear Mr. Rohrer:

The ACHP received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible for listing on the National Register of Historic Places. Based upon the information you provided, we do not believe that our participation in consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us. Pursuant to 36 CFR 800.6(b)(iv), you will need to file the final Programmatic Agreement (PA) and related documentation at the conclusion of the consultation process. The filing of the PA with us is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Martha Catlin at 202-606-8505.

Sincerely,

[illegible] Klima
Director
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 809 • Washington, DC 20004
Phone: 202-606-8503 • Fax: 202-606 8647 • achp@achp.gov • www.achp.gov

OCT 30 2002

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U. S. Department
of Transportation

Federal Aviation
Administration

WASHINGTON AIRPORTS DISTRICT OFFICE
23723 Air Freight Lane, Suite 210
Dulles, Virginia 20166
Telephone: 703/661-1354
Fax: 703/661-1370

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RECEIVED
OCT 29 2002
WMATA/EXTN-DCRTP

October 25, 2002

~~Mr. John Dittmeier~~
Dulles Corridor Rapid Transit Project
1550 Wilson Boulevard, Suite 300
Arlington, VA 22209

Dear Mr. Dittmeier:

As requested in the coordination meeting held October 10th this letter provides elaboration on some of the issues we have raised in our earlier comment letter and various communications we have had over the last year concerning the proposed Dulles Corridor rail project.

As we have stated earlier, under the Federal Aviation Administration (FAA) **Policy and Procedures Concerning the Use of Airport Revenue**, published in the Federal Register on February 16, 1999, the Authority would be required to obtain the fair market value in compensation for any airport property used for the project. This policy applies to the Dulles Airport Access Road and any stations or other facilities that would be located on airport land.

One of the major issues under discussion has been the siting of a rail yard on airport property. We are concerned that constructing the rail yard on Site 15 appears to have the greatest environmental impacts of the three alternatives presented in the Draft Environmental Impact Statement (DEIS). Also, the FAA believes that a rail yard located on Dulles International Airport is not a desirable use of airport land. We have concerns that the preferred alternative may not pass legal muster under the National Environmental Policy Act since there appears to be an practicable alternative rail yard site that meets the project purpose with less adverse environmental impact.

To access Site 15 on the airport property, the yard rail lead cuts a swath through approximately 2,500 linear feet of mostly forested wetlands and crosses Horsepen Run. The impacts of Site 7, previously identified as the most viable site both operationally and environmentally, has floodplain impacts but no wetland impacts. Federal regulations allow impacts to wetlands only if there are no practicable alternatives. Likewise, Executive Order 11988 has a practicability test for floodplain impacts. Our Airport Environmental Handbook, FAA Order 5050.4a, requires that coordination be done with agencies with special interest in wetlands. This Order states that agencies with permitting actions, such as the U.S. Army Corps of Engineers and state agencies, Virginia

Department of Environmental Quality (DEQ) in this case, shall be asked to advise if they foresee any difficulty issuing their permits for the project. I understand from our last meeting that the Corps has not been asked this but the DEQ may have commented. We suggest that you coordinate with these agencies and provide documentation from them in the Final Environmental Impact Statement (FEIS). The FEIS must demonstrate that Site 15 is the least damaging practicable alternative if it were to be approved. The FAA is required to write a Record of Decision (ROD) for the project that must pass legal review.

We have also expressed concerns about security for the Airport. The project, particularly the proposed rail yard, is a substantial intrusion into airport property. As we discussed, the Transportation Security Agency (TSA) now handles airport security. We would not be comfortable with the proposed project unless TSA "signs off" on the project. The Federal Transit Administration may also require "sign off" for the whole project since it is a transportation project and may be within the purview of TSA.

In order for FAA to write a favorable ROD for the project, first the Federal Transit Administration (FTA) must issue their ROD and the Metropolitan Washington Airports Authority must show the project on their Airport Layout Plan and obtain FAA approval.

At the last meeting, MWAA's policy on keeping occupied structures out of the inner approach to runways was discussed. This is an extension of FAA's policy to keep Runway Protection Zones clear of places of public assembly as well as some other uses. The building associated with the rail yard is shown outside of the approach to a proposed new runway located 4,000' west of the existing Runway 1L/19R. As discussed, this is only one of several alternatives for the location of the proposed new runway that is being studied in our EIS. If a new runway were to be constructed at some other separation distance from the existing runway, the design of the rail yard must respect the new approach or MWAA must revise their policy.

If you have any questions about these comments, please contact Mr. Joe Delia at (703) 661-1358 in regard to the land issues or Mr. Frank Smigelski at (703) 661-1365 in regard to environmental issues.

Sincerely,

Terry J. Page, Manager
Washington Airports District Office

cc: Mr. Glenn, FTA
Mr. Hackett, MWAA
Ms. Mather, AEA 610

NVRPA 7052730905 11/01 '02 09:46 NO.694 02/02

NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
5400 Ox Road, Fairfax Station, Virginia 22039-1022
Telephone: (703) 352-5900 • FAX: (703) 273-0905
Gary N. Fenton
Executive Director

November 1, 2002

Corey W. Hill
Northern Virginia Regional Manager
Virginia Department of Rail and Public Transportation
1550 Wilson Boulevard, Suite 300
Arlington, VA 22209

**RE: Dulles Corridor Rapid Transit Project Public Hearings Report**

Dear Mr. Hill:

We have reviewed the Public Hearings Report for the Dulles Corridor Rapid Transit Project Draft EIS and offer the following comment related to the W&OD Railroad Regional Park.

Section 7.3.2 states, "Any artificial lighting, which the Project might install, would be the maintenance responsibility of the park owners." Since the artificial lighting is proposed as mitigation for the project's negative visual and safety impacts on park property, its maintenance would be the responsibility of the project sponsor.

Thank you for the opportunity to comment. Please contact me at 703-359-4628 or at diglhaut@nvrpa.org if you have any questions or concerns.

Sincerely,

Daniel Iglhaut
Land Administration and Planning Specialist

Paul McCray, Manager, W&OD Railroad Regional Park

PARTICIPATING JURISDICTIONS - MEMBERS

ALEXANDRIA
David M. Pritzker
William C. Dickinson

ARLINGTON
John G. Milliken
Amanda R. Bills

FAIRFAX COUNTY
Jean R. Packard
Patrick R. Clarkin

CITY OF FAIRFAX
C. Dante Cook, M.D.
Arthur F. Lillie

FALLS CHURCH
Walter L. Mess
Barry D. Buechler

LOUDOUN
Dr. James C. Wiley
Joan G. Rokus

*A Recycled and Recyclable paper*

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
Telephone 786-2121

1 November 2002

Mr. Corey W. Hill
Northern Virginia Regional Manager
Virginia Department of Rail and Public Transportation
1550 Wilson Boulevard, Suite 300
Arlington, Virginia 22209

Re: Docket Number R02-1-Dulles Corridor Rapid Transit Project Public Hearings Report

Dear Mr. Hill:

The Department of Conservation and Recreation (DCR) has previously submitted comments on the Dulles Corridor Rapid Transit Project. After review of the "Public Hearings Report for the Draft Environmental Impact Statement and General Plans for the Dulles Corridor Rapid Transit Project", the DCR's Division of Natural Heritage DCR-DNH would like to offer the following comments:

1) According to the response comment documented on the top of page 209, Coastal Resources conducted a survey for rare, threatened and endangered plants in April and August of 2002 and the survey results indicated no species were found. DCR-DNH would like to review this survey report before it is included in the Final Environmental Impact Statement to verify all potential sites within the study area were surveyed for rare plants and verify the survey was conducted during the appropriate time of year. DCR-DNH is concerned that the rare diabase plant, earleaf foxglove (*Agalinis auriculata*, G2/S1/SOC/NS), may have been missed in the August survey due to the difficulty in identifying the plant in its vegetative state. The actual flowering period for this plant is September.

2) Also the reference to "Mr. Lugwig" in the response comment should be corrected to " Mr. Ludwig".

3) Please send the survey results to Rene Hypes, Project Review Coordinator-Division of Natural Heritage, Department of Conservation and Recreation, 217 Governor Street, 2nd Floor, Richmond, Virginia 23219.

Thank you for the opportunity to review the public hearings report.

Sincerely,

Derral Jones
Planning Bureau Manager

*An Agency of the Natural Resources Secretariat*

OCT 31 2002

17,405

2039

COMMONWEALTH of VIRGINIA

**Department of Historic Resources**

**W. Taylor Murphy, Jr.**
*Secretary of Natural Resources*

2801 Kensington Avenue, Richmond, Virginia 23221

**Kathleen S. Kilpatrick**
*Director*

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.state.va.us

October 29, 2002

Mr. Corey W. Hill
Northern Virginia Regional Manager
VDRPT
1550 Wilson Boulevard, Suite 300
Arlington, Virginia 22209

Re: Dulles Corridor Rapid Transit Project
DHR File Numbers 2000-1061

Dear Mr. Hill:

Thank you for providing our department with a copy of the Dulles Rapid Transit Project Public Hearings Report. We would like to reiterate that we look forward to working with your department, along with the federal agencies involved, in the successful completion of the Section 106 process for this project.

To date, the Section 106 process has not yet been initiated. Other than an initial meeting held on February 28, 2001, we have received no information regarding NHPA compliance. It is our understanding that the identification of previously identified historic properties is well under way and that the consultant will begin the identification of previously unidentified properties in the near future. Please bear in mind that the VDRPT and FTA will need SHPO concurrence on all eligibility and effect determinations.

Thank you again for the opportunity to review and comment on the referenced document. If you have any questions or if we can be of any further assistance do not hesitate to contact me at (804) 367-2323 ext. 140, lrichards@dhr.state.va.us or Marc Holma at ext. 114, mholma@dhr.state.va.us.

Sincerely,

Lily A. Richards
Archaeologist and Historian, Office of Review and Compliance

C. Henry Ward, Parsons

**Administrative Svcs.**
10 Courthouse Avenue
Petersburg, VA 23803
Tel: (804) 863-1688
Fax: (804) 862-6196

**Petersburg Office**
23-B Bollingbrook Street
Petersburg, VA 23803
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**Portsmouth Office**
612 Court Street, 3rd Floor
Portsmouth, VA 23704
Tel: (757) 396-8709
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**Roanoke Office**
1030 Penmar Avenue, SE
Roanoke, VA 24013
Tel: (540) 857-7585
Fax: (540) 857-7588

**Winchester Office**
107 N. Kent Street, Suite 203
Winchester, VA 22601
Tel: (540) 722-3427
Fax: (540) 722-7535

OCT 24 2002 14:17 FR OFFICE OF TRANS SERV 703 737 8513 TO 97033249668 P.02/02

Loudoun County, Virginia
www.loudoun.gov
County Administration
1 Harrison Street, S.E., 5th Floor, P.O. Box 7000, Leesburg, VA 20177-7000
Telephone (703) 777-0200 • Fax (703) 777-0325

October 24, 2002

Mr. Cory Hill
Northern Virginia Regional Manager
Virginia Department of Rail and Public Transportation
PO Box 590
Richmond, Virginia 23218-0590

Dear Cory:

This is in reference to the Public Hearings Report for the Dulles Corridor Rapid Transit Project. We complement the Project team on this significant effort. We are pleased the Project Team concluded as we did that we should go directly to Rail and that site Y15 is best for the yard site.

We do have a significant issue at the Route 772 station that we need to bring to your attention. The issue is that of parking. WMATA analysis of unconstrained parking demand at this station has estimated a need for 3,300 parking spaces. It is our intention, subject to Board of Supervisors (BOS) approval, to address this demand.

We have been working with two major active land development applicants immediately adjacent to the station and made significant progress in identifying locations for parking facilities to accommodate this demand. It is our belief that metro-parking garages on both sides of the station connected by a transit connector bridge offers the best possible solution. We are in negotiations with the developers and believe that we can get dedication of the land necessary to accommodate these improvements at no cost to the project.

The land involved in these potential dedications is currently in the process of rezoning. We estimate a resolution of these rezoning cases by the BOS in the foreseeable future. Assuming favorable action by the BOS, we are asking at this time that the facilities necessary to accommodate the forecasted WMATA demand be incorporated into the Project and that cost of such facilities be treated as project costs. We view the provision of these facilities as being in addition to the parking already included in the project at the Route 606 station, recognizing that only through such actions will we achieve the full beneficial results of the Metro Rail system, both to Loudoun County, but perhaps more importantly, to the region. If we do not accommodate demand at its origin, it will find alternative means of travel which may be detrimental to our Region's air quality and congestion management goals.

Sincerely,

Kirby Bowers
County Administrator

cc: John Dittmeier, WMATA
John J. Clark, Director, Office of Transportation

** TOTAL PAGE.02 **

Loudoun County, Virginia
www.loudoun.gov
County Administration
1 Harrison Street, S.E., 5th Floor, P.O. Box 7000, Leesburg, VA 20177-7000
Telephone (703) 777-0200 • Fax (703) 777-0325

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December 20, 2002

RECEIVED
DEC 26 2002

Ms. Karen Rae
Director of the Virginia Department of Rail and Public Transportation
Virginia Department of Rail and Public Transportation
1313 E. Main Street, Suite 300
PO Box 590
Richmond, Virginia 23218-0590

Dear Ms. Rae:

I am pleased to forward to you a copy of the Loudoun County Board of Supervisors Endorsement of Metro Garage Parking at the Route 772 Rail Station north and south of the Greenway. The Board's action, taken on December 2, 2002, also directed me to provide a letter to VDRPT referencing the Board's Endorsement of a Metro Garage Parking including the steps the County is taking to achieve consistency with County Transit Oriented Development (TOD) policies. Attachment 1 is a copy of the Board's Endorsement.

The County has been coordinating with WMATA on issues related to bringing Metrorail Service through the Dulles Corridor to Loudoun stations. A WMATA analysis undertaken as part of the NEPA process shows an unconstrained parking demand of 3,300 parking spaces at the Route 772 station. This issue has become part of the County's review of two high density transit oriented developments north and south of the station. The two developments are seen as providing resources for Metro Garage Parking as well as a Transit Connector Bridge running across the Greenway between the projects.

The first development, Moorefield Station, was approved by the Board of Supervisors on December 16, 2002. It is the largest mixed use development in the history of Loudoun County and will be a rich source of future patronage for the Metrorail System. The final proffer package includes twelve acres of land adjacent to the station dedicated to station land uses. An additional 3.6 acres will be dedicated for a conveniently located Metrorail Parking Garage. This site is proposed to provide approximately half of the necessary 3,300 parking spaces identified by WMATA. The proffers also provide for a network of multi-modal urban roads connecting the planned road network for Loudoun County with the Route 772 Station. Finally, the proffers provide funds for a portion of the cost of the Transit Connector Road.

We are also negotiating with developers north of the Greenway to provide land dedication for the remainder of the necessary 3,300 parking spaces. Loudoun County hopes to achieve this objective next year. The bottom line is the NEPA analysis did not assume any of these spaces would be provided at the Route 772 Station. Their provision will likely result in this station being the fourth highest generator of passenger loading on the Dulles Corridor Rail Line, out of thirteen stations, in a 2025 time frame. Only one of the Tysons Stations will have higher forecasted daily boardings.

We need VDRPT's help to realize the full benefits of this progress. Loudoun County is asking at this time that the facilities necessary to accommodate the forecasted WMATA demand be incorporated into the Project and that cost of such facilities be treated as project costs. Specifically these facilities are garage parking for 3,300 vehicles and a vehicular bridge over the Metro tracks connecting the north and south parking garages at this station. We view the provision of these facilities as necessary to achieve the full beneficial results of the Metro Rail system, both to Loudoun County, but perhaps more importantly, to the region. If we do not accommodate demand at its origin, it will find alternative means of travel which may be detrimental to our Region's air quality and congestion management goals.

If you have any questions concerning any of the material in this letter, please contact John Clark, Director, Loudoun County Office of Transportation Services at 703-737-8514 or jclark@loudoun.gov.

Sincerely,

Kirby Bowers
County Administrator

cc: John Dittmeier, WMATA
John J. Clark, Director, Office of Transportation
Corey Hill, Virginia Department of Rail and Public Transportation
Hobie Mitchel, Commonwealth Transportation Board

Enc. Loudoun County Board of Supervisors Endorsement of Parking at Route 772 Rail Station

Loudoun County, Virginia
www.co.loudoun.va.us
County Administration
1 Harrison Street, S.E., 5th Floor, P.O. Box 7000, Leesburg, VA 20177-7000
Telephone (703) 777-0200 • Fax (703) 777-0325

At a meeting of the Board of Supervisors of Loudoun County, Virginia, held in the County Administration Building, Board of Supervisors' Meeting Room, 1 Harrison St., S.E., Leesburg, Virginia, on Monday, December 2, 2002 at 9:00 a.m.

PRESENT: Scott K. York, Chairman
Eleanore C. Towe, Vice Chairman
William Bogard
James G. Burton
Eugene A. Delgaudio
Chuck Harris
Mark Herring
J. Drew Hiatt
Sally Kurtz

IN RE: TRANSPORTATION COMMITTEE REPORT/PARKING AT ROUTE 772 RAIL STATION

Mr. Bogard moved that the Board of Supervisors approve the Transportation Committee's recommendation and endorse Metro garage parking at the Route 772 Rail Station north and south of the Greenway and that the Board direct the County Administrator to provide a letter to VDRPT referencing the Board's endorsement of parking at the Route 772 Rail Station, including steps the County is taking to achieve these policies consistent with County TOD policies.

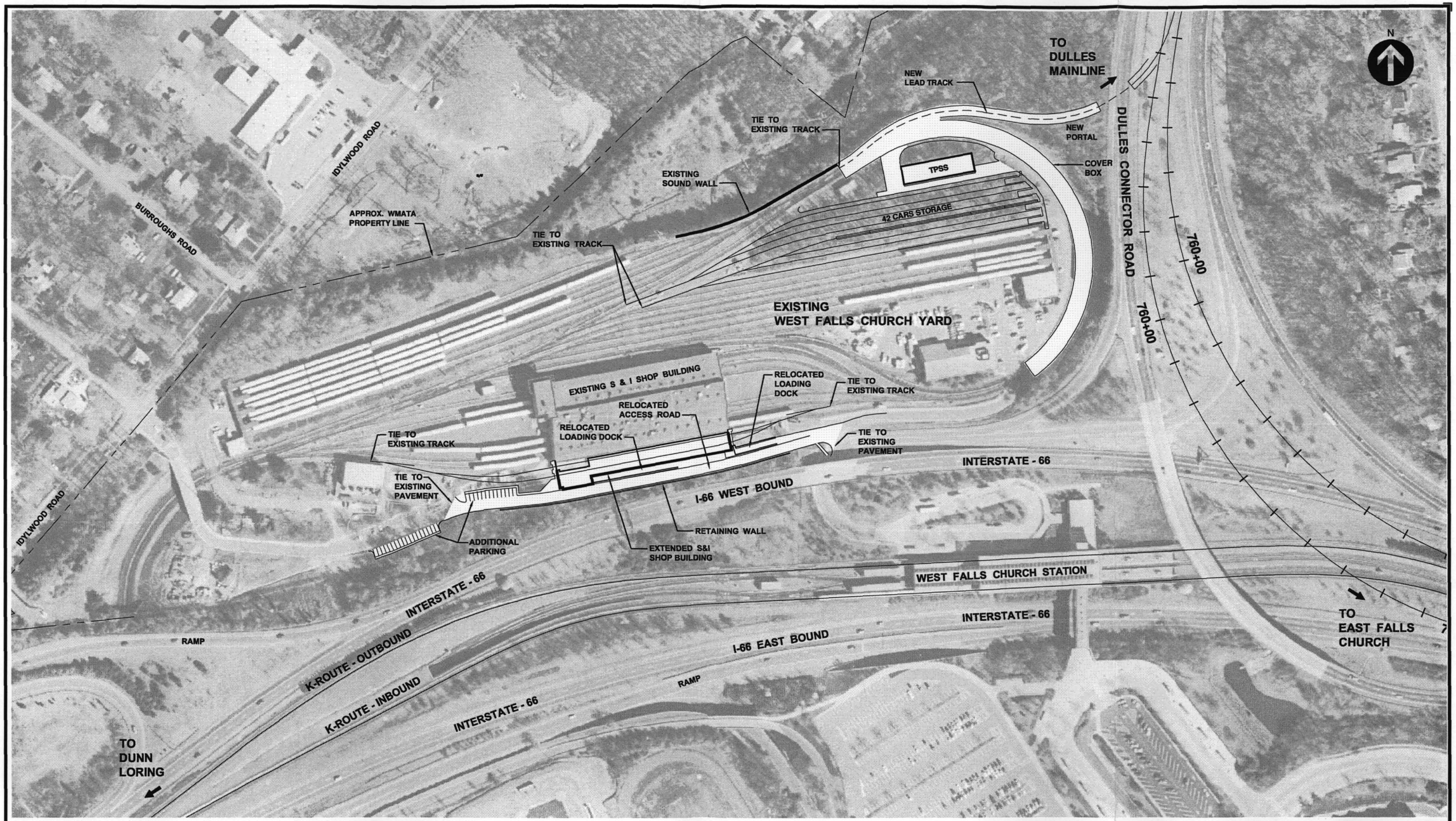
Seconded by Ms. Kurtz.

Voting on the Motion: Supervisors Bogard, Burton, Delgaudio, Harris, Herring, Hiatt, Kurtz, and Towe –Yes; None – No; Supervisor York – Absent for the Vote.

A COPY TESTE:

Denise Pyles
DEPUTY CLERK FOR THE LOUDOUN
COUNTY BOARD OF SUPERVISORS

DCR:december 2, 2002 resolution-j

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DULLES CORRIDOR RAPID TRANSIT PROJECT

CAPITAL TRANSIT CONSULTANTS

SUBMITTED _____ PROJECT MANAGER

Dulles Corridor Rapid Transit Project

YARD & SHOP SITE PLAN
WEST FALLS CHURCH YARD

SCALE: 1"=100' 50 0 50 100

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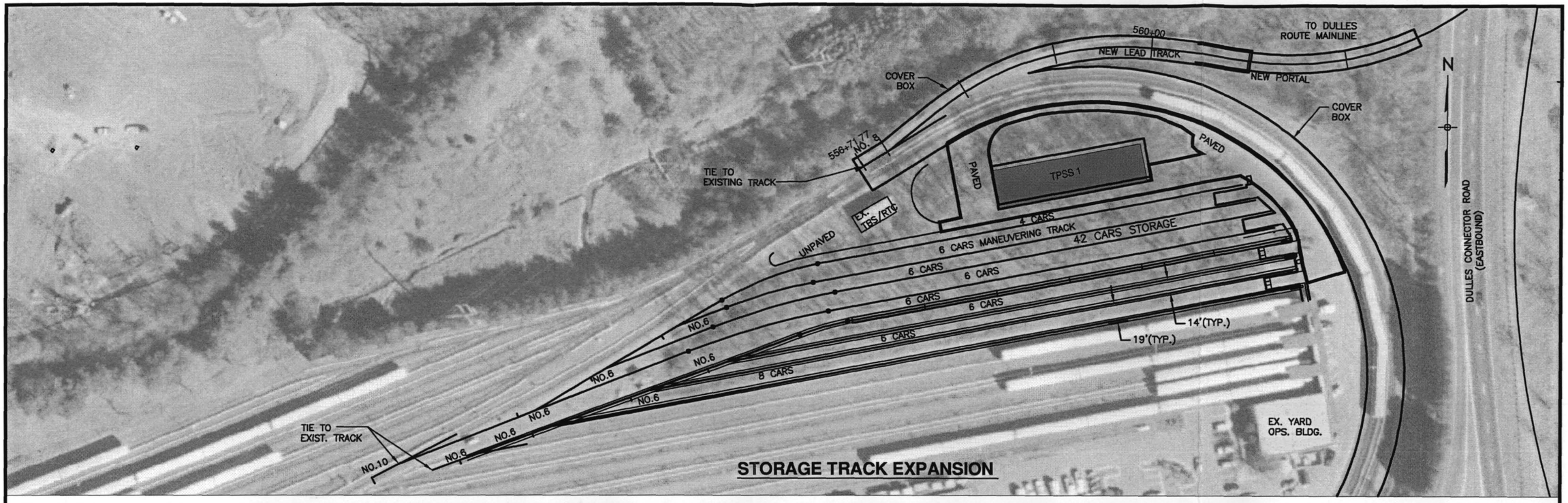


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| APPROVED: P. ELMAN 9-2003 DATE | | | Dulles Corridor Rapid Transit Project |

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PLAN
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01A ALIGNMENT
WEST FALLS YARD SITE

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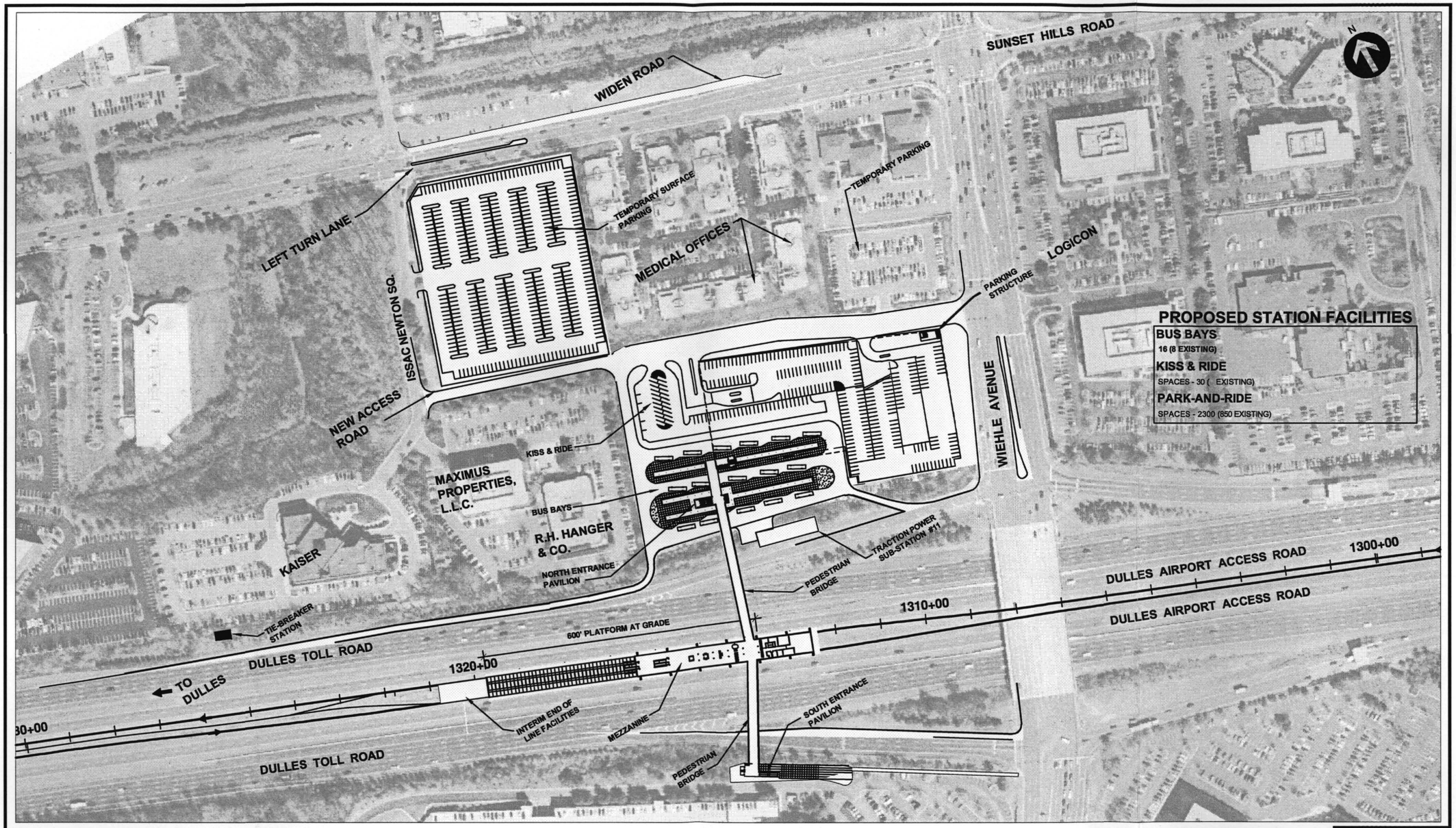


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DULLES CORRIDOR RAPID TRANSIT PROJECT

CAPITAL TRANSIT CONSULTANTS

SUBMITTED PROJECT MANAGER

Dulles Corridor Rapid Transit Project

SITE PLAN
WIEHLE AVENUE STATION
METRORAIL ALTERNATIVE
OPTION A

SCALE: 1"=100' (50 0 50 100)

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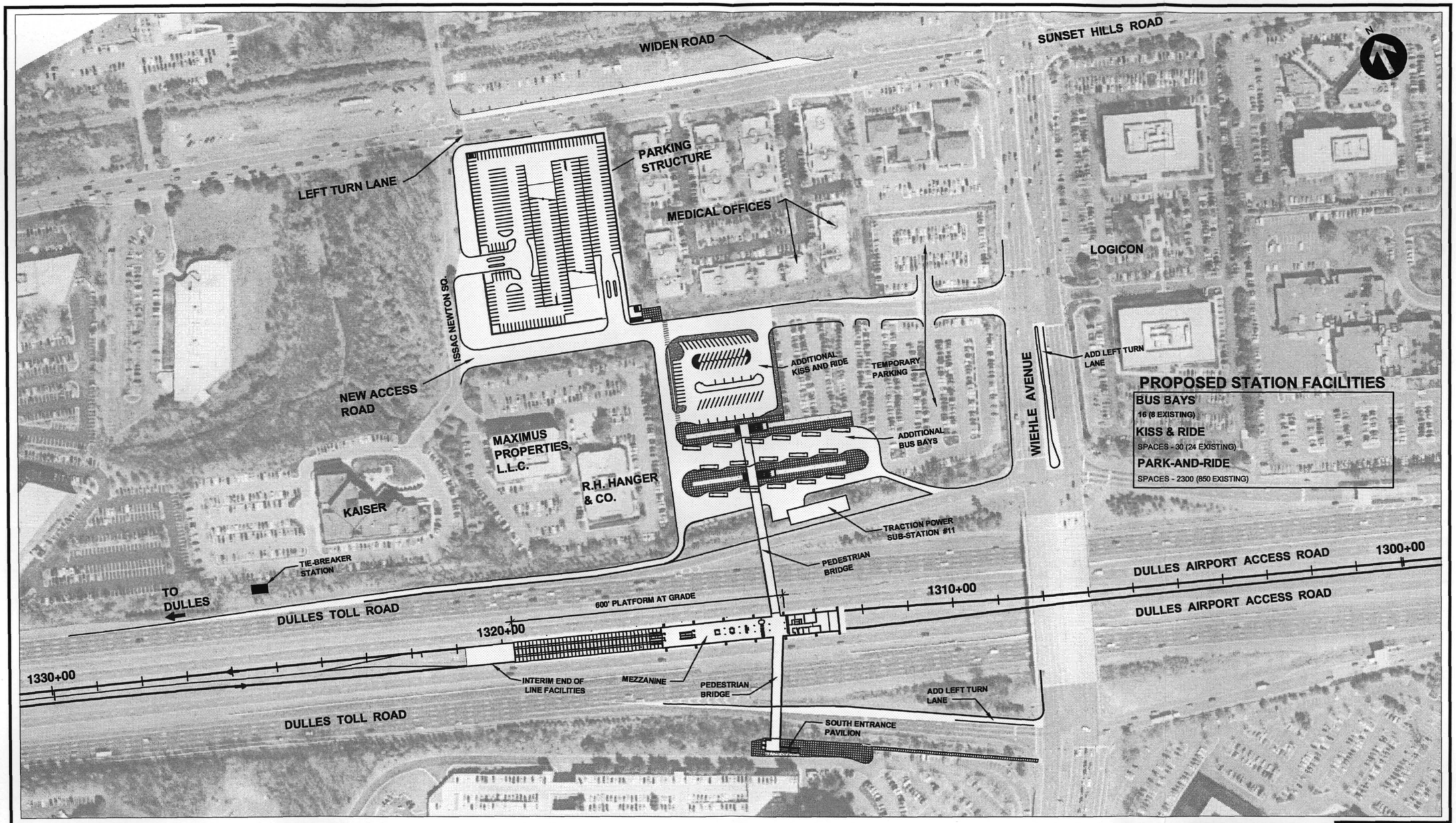


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DULLES CORRIDOR RAPID TRANSIT PROJECT

CAPITAL TRANSIT CONSULTANTS

SUBMITTED _____ PROJECT MANAGER

Dulles Corridor Rapid Transit Project

SITE PLAN
WIEHLE AVENUE STATION
METRORAIL ALTERNATIVE
OPTION B

SCALE: 1"=100' (50 0 50 100)

DRAWING NO.: GPN-A-203B-WA

Environmental Conditions Sheet

10 Environmental Conditions Sheet Number

Study Corridor

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# Environmental Conditions Sheet Index

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
- Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

Filename: constr_1.pdf. Aerial photography: Copyright 2000. VARGIS, LLC, Herndon, Virginia. All rights reserved.

# Environmental Conditions (Sheet 1) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
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Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

Filename: constr_2.pdf. Aerial photography: Copyright 2000. VARGIS, LLC, Herndon, Virginia. All rights reserved.

# Environmental Conditions (Sheet 2) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

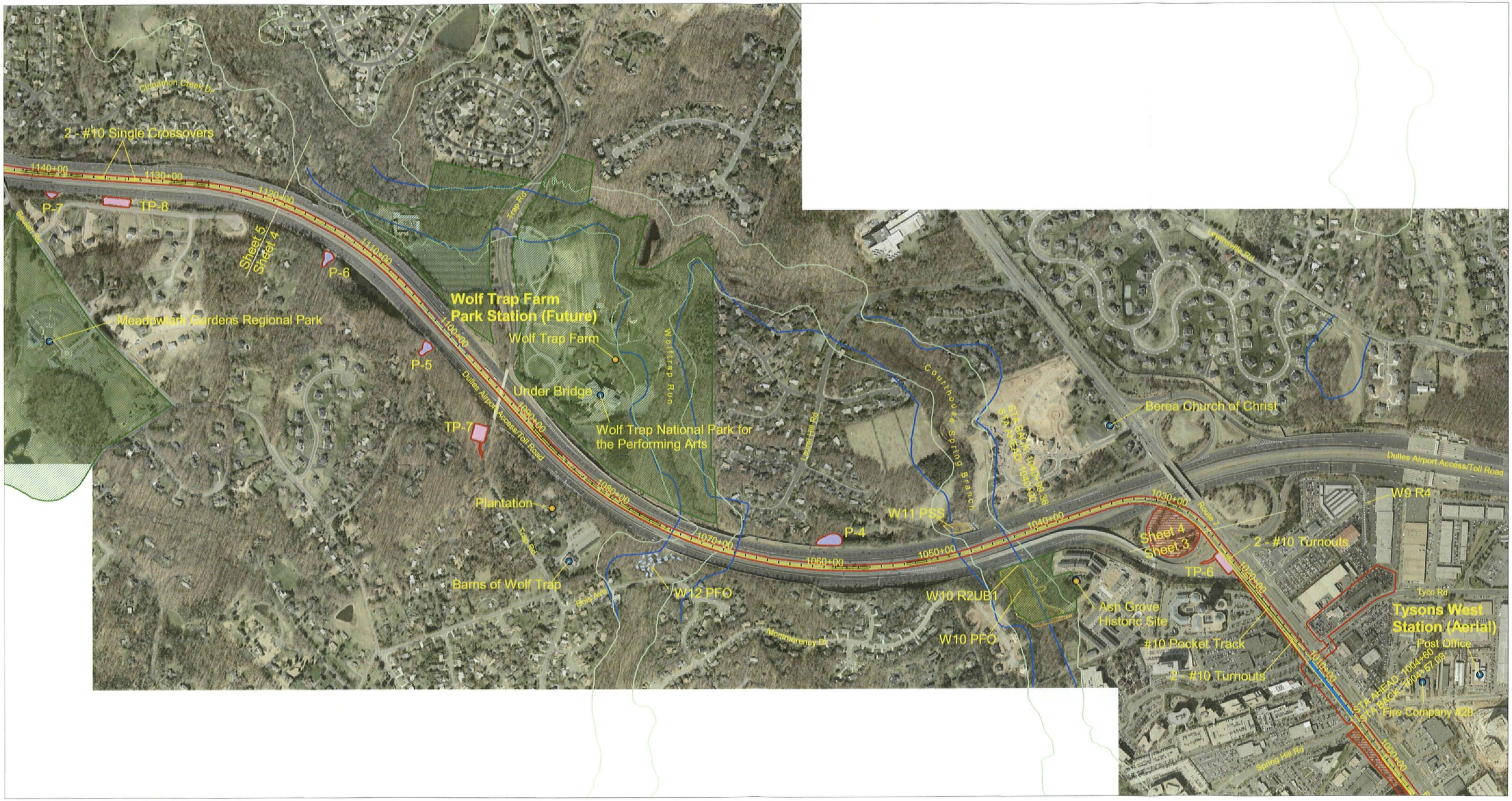
0 400 800 Feet

Filename: constr_3t6.pdf. Aerial photography: Copyright 2000. VARGIS, LLC, Herndon, Virginia. All rights reserved.

# Environmental Conditions (Sheet 3) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project




Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
Wetlands Delineated by MWAA
Tributary Streams
Major Streams
FEMA 100-Year Floodplain

0 400 800 Feet

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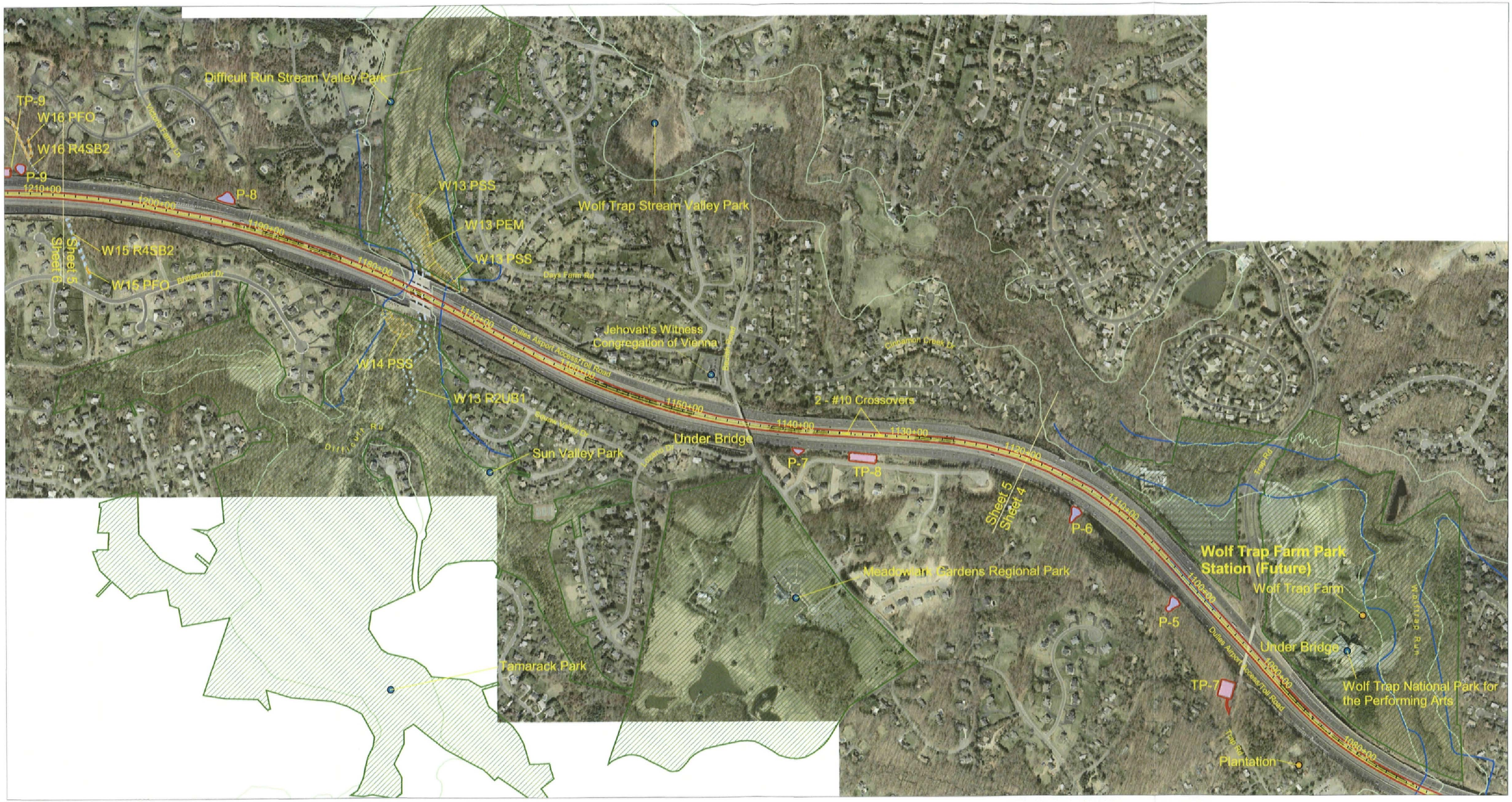
# Environmental Conditions (Sheet 4) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project




**Alignment**
- Stationing
- Alignment
- Station
- Station Facilities

**Limits of Disturbance**
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
- Proposed Stormwater Facilities/Ponds

**Environmental Constraints**
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

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# Environmental Conditions (Sheet 5) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
Wetlands Delineated by MWAA
Tributary Streams
Major Streams
FEMA 100-Year Floodplain

0 400 800 Feet

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# Environmental Conditions (Sheet 6) Locally Preferred Alternative and Phase 1

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

**Alignment**
- Stationing
- Alignment
- Station
- Station Facilities

**Limits of Disturbance**
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
- Proposed Stormwater Facilities/Ponds

**Environmental Constraints**
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

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# Environmental Conditions (Sheet 7) Locally Preferred Alternative

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
Wetlands Delineated by MWAA
Tributary Streams
Major Streams
FEMA 100-Year Floodplain

0 400 800 Feet

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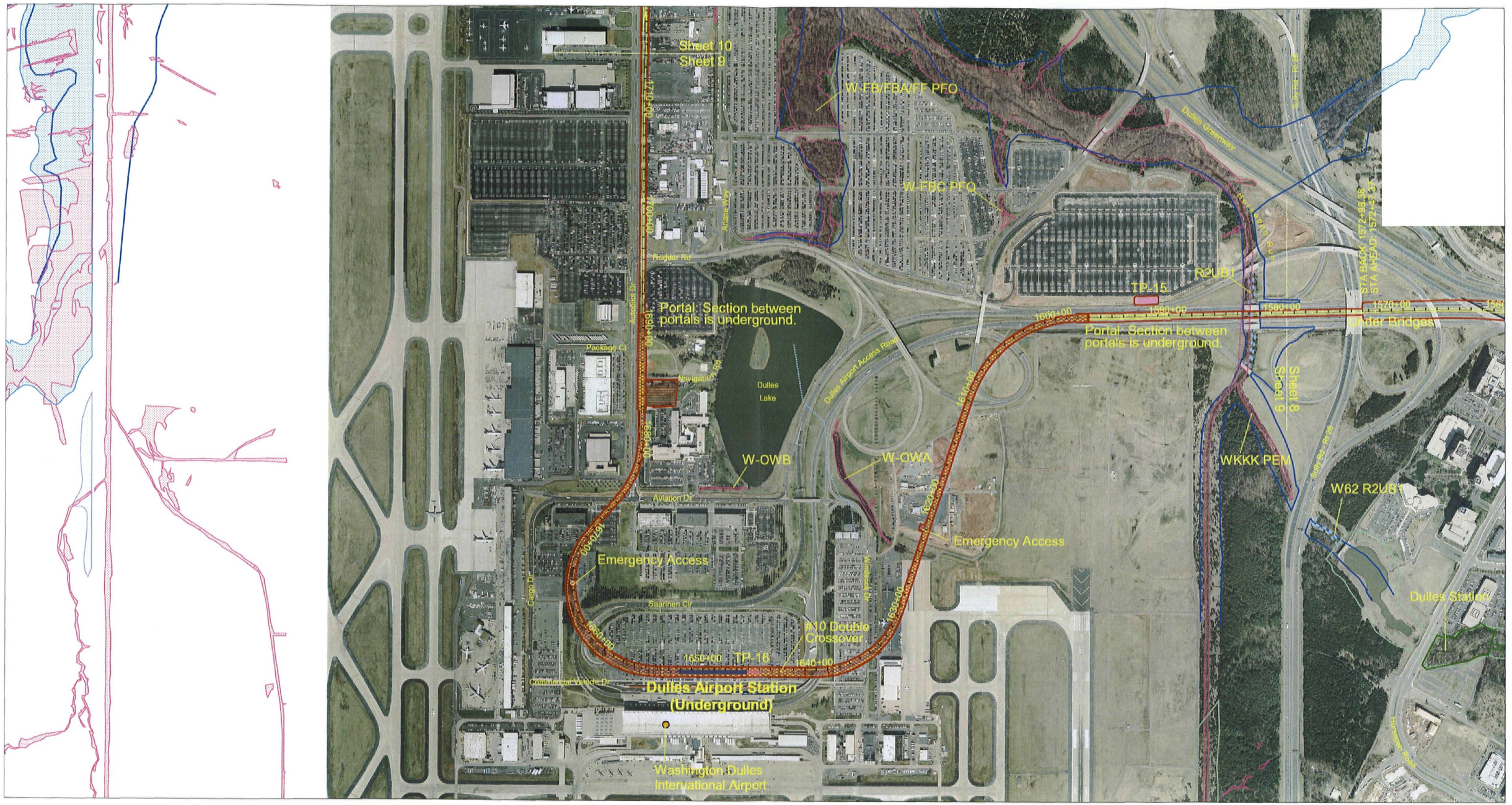
# Environmental Conditions (Sheet 8) Locally Preferred Alternative

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project




Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
Wetlands Delineated by MWAA
Tributary Streams
Major Streams
FEMA 100-Year Floodplain

0 400 800 Feet

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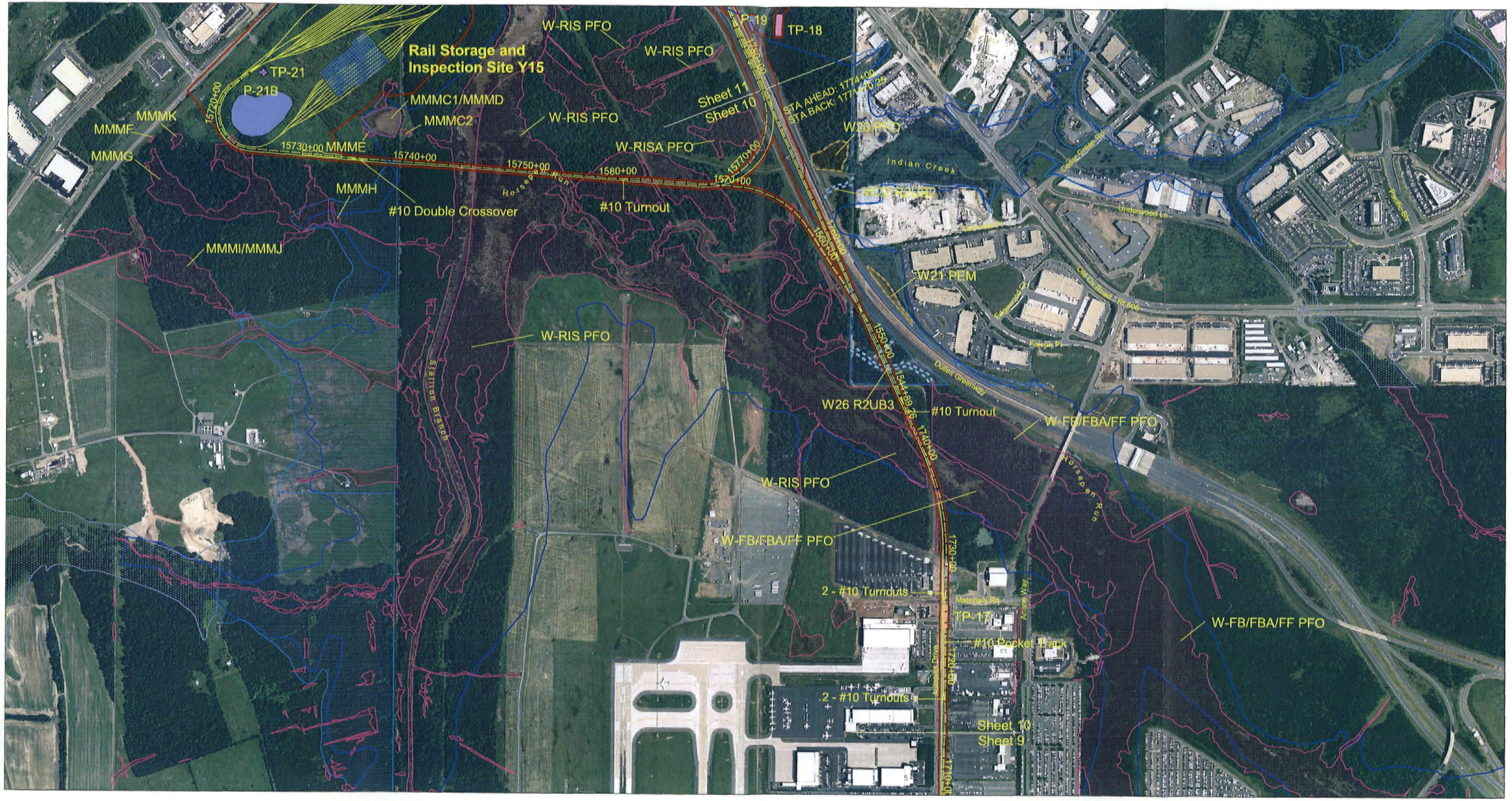
# Environmental Conditions (Sheet 9) Locally Preferred Alternative

Dulles Corridor Rapid Transit Project

Revision Date: 09-03-03




Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

Substations (TP-#) & Tie Breakers (B-#)

Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

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# Environmental Conditions (Sheet 10) Locally Preferred Alternative

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project

Sheet 12
Sheet 11
1860+00
1870+00
Longpost County Parkway
P-23
TP-19
Under Bridge
1850+00
P-22
1840+00
1830+00
Y1 R2UB1/2
Y1 R2UB1/2
Y1 PFO
Y1 PEM
Broad Run
Y2 PFO
Y2 PEM
Y3 PSS
Y3 R2UB2
W25 R2UB2
Cockerille House
P-21
1820+00
1810+00
Dulles Greenway
W25
W25 R4SB2
Broad Run
Horsepen Run
P-20
Route 606
Station
Under
Bridge
Old Ox Road - Rt 606
Lexington Rd
Ranchport Dr
Moran Rd
Horsepen
Lake
MMMB
W-RIS PFO
W24 PEM
2 - #10 Single Crossovers
P-19
TP-18
MMMA
Rail Storage and
Inspection Site Y15
W-RIS PFO
W-RIS PFO
TP-21
P-21B
15720+00
MMMC1/MMMD
MMMK
MMMF
MMMG
MMMC2
W-RIS PFO
Sheet 11
Sheet 10
STA AHEAD: 1774+00
STA BACK: 1771+70.25
W-RISA PFO
15730+00
MMME
15740+00
15750+00
1580+00
15770+00
1570+00
W23 PFO
Indian Creek
#10 Double Crossover
MMMH
Horsepen Run
#10 Turnout
Cedar Grove Road

Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
- Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

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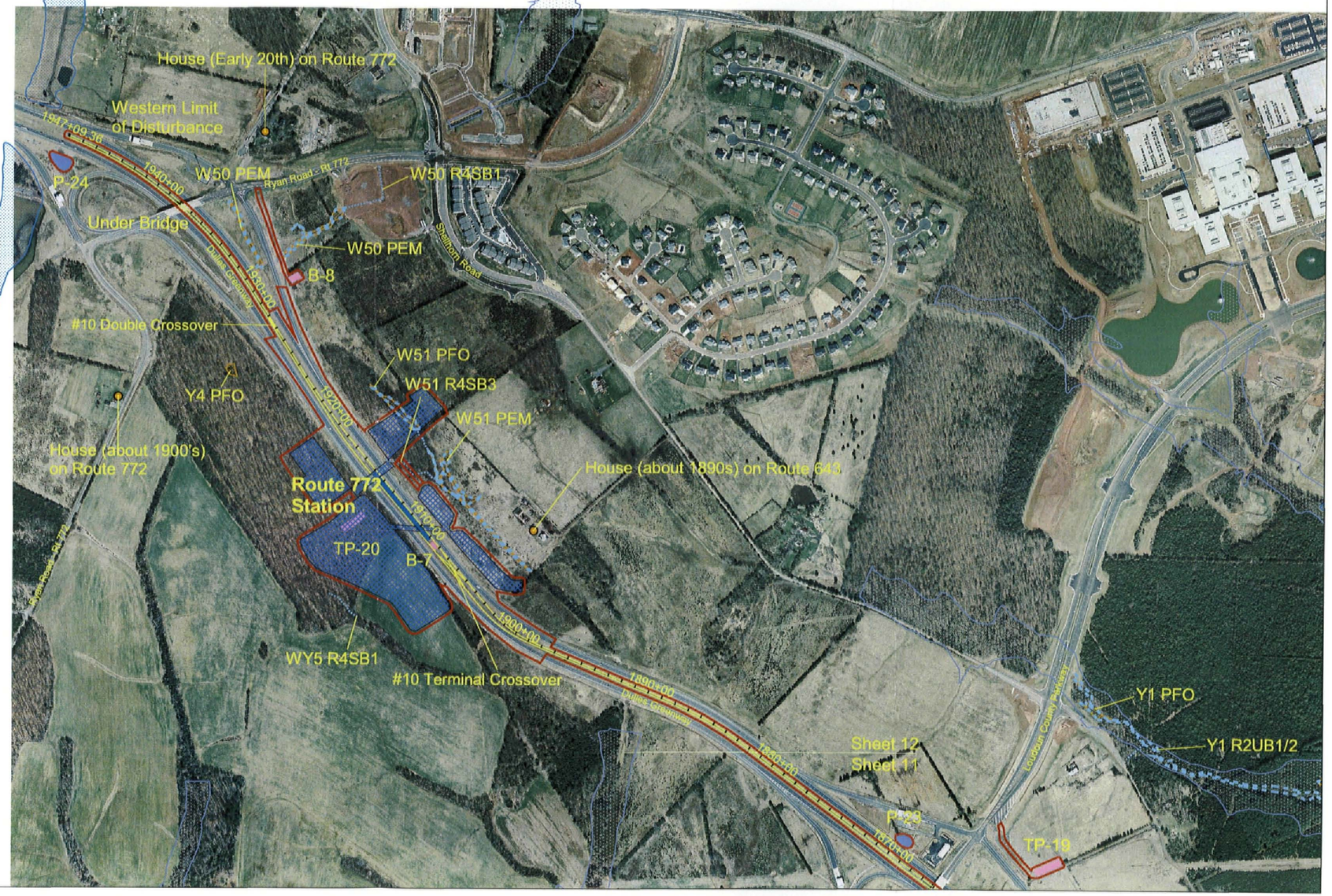
# Environmental Conditions (Sheet 11)
# Locally Preferred Alternative

Dulles Corridor
Rapid Transit Project

Revision Date: 09-03-03




Alignment
- Stationing
- Alignment
- Station
- Station Facilities

Limits of Disturbance
- Typical
- Cut & Cover
- Tunnel
- Contractor Work Area

- Substations (TP-#) & Tie Breakers (B-#)
- Proposed Stormwater Facilities/Ponds

Environmental Constraints
- Cultural (Historic) Sites
- Community Facilities
- Parklands
- Resource Protection Areas

- Wetlands (Jurisdictional Determination in process by US COE)
- Wetlands Delineated by MWAA
- Tributary Streams
- Major Streams
- FEMA 100-Year Floodplain

0 400 800 Feet

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# Environmental Conditions (Sheet 12) Locally Preferred Alternative

Revision Date: 09-03-03

Dulles Corridor Rapid Transit Project